

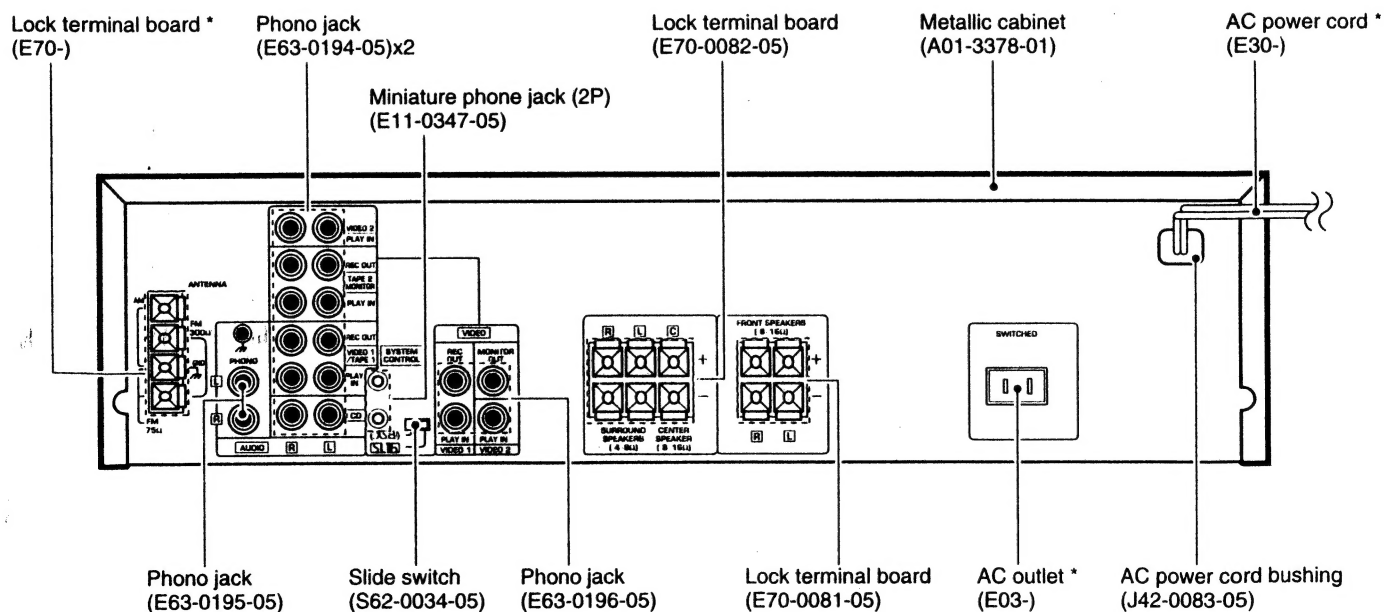
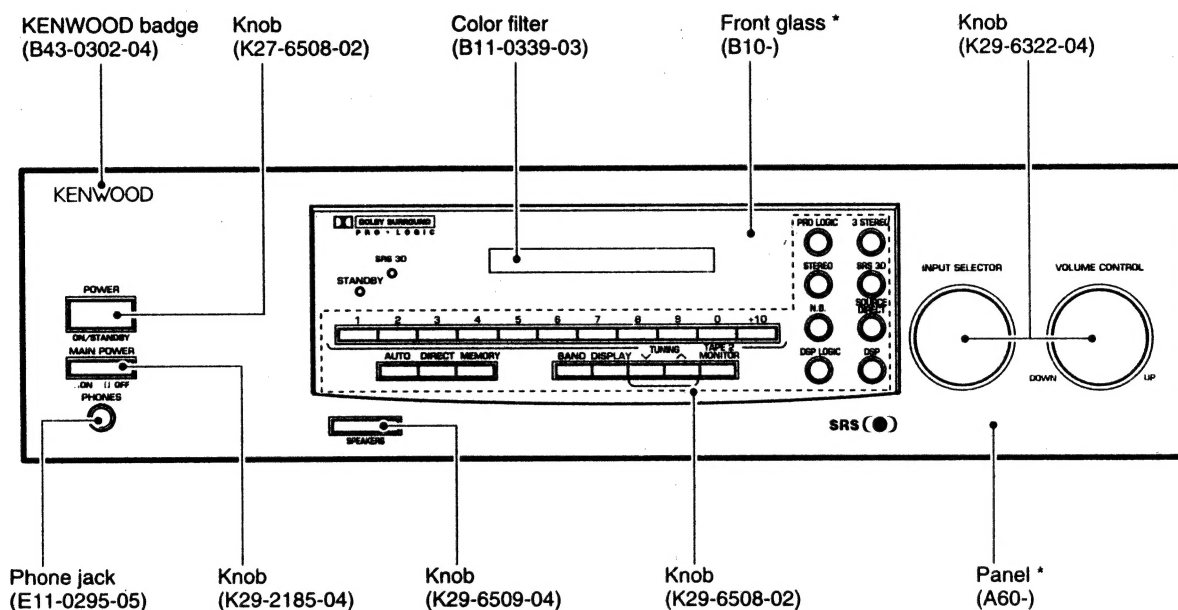
# AUDIO-VIDEO SURROUND RECEIVER

# 105VR/KR-V5090

## SERVICE MANUAL

# KENWOOD

© 1997-01/B51-5270-00 (K/K) 3840



\* Refer to parts list on page 31.

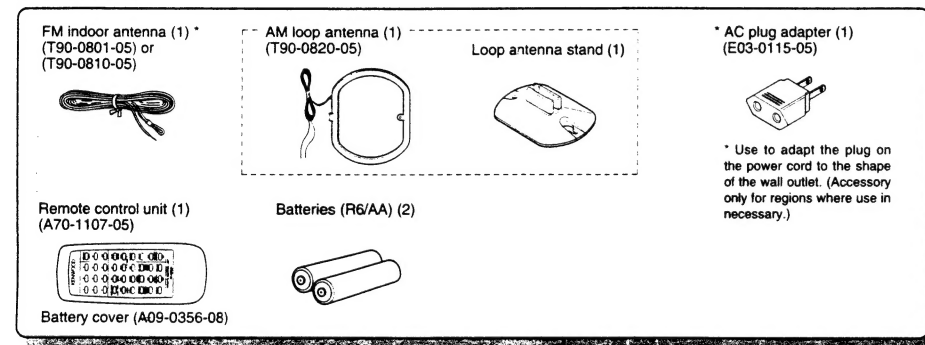
# 105VR/KR-V5090

## CONTENTS/ACCESSORIES

### Contents

CONTENTS/ACCESSORIES .....	2	PC BOARD .....	7
DISASSEMBLY FOR REPAIR .....	2	SCHEMATIC DIAGRAM .....	13
CONTROLS .....	3	EXPLODED VIEW .....	30
ADJUSTMENT .....	5	PARTS LIST .....	31
WIRING DIAGRAM .....	6	SPECIFICATIONS .....	39

### Accessories

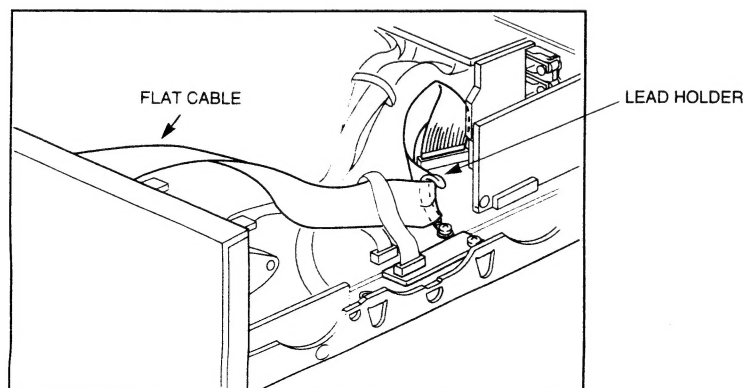


\* Refer to parts list

## DISASSEMBLY FOR REPAIR

### ※ CAUTION FOR REPAIR

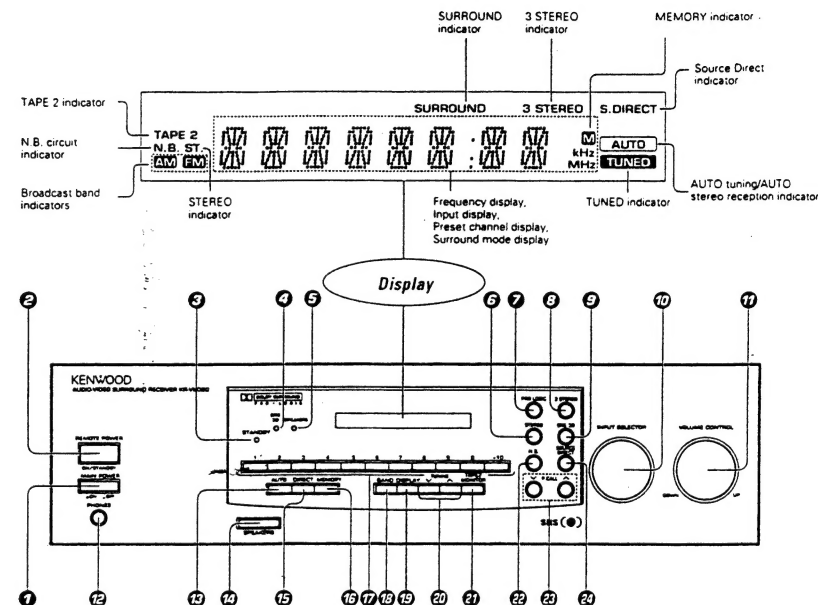
Keep a flat cable away from heatsink for safety, and tie it with the lead holder as illustration if disassembled for repair.



# 105VR/KR-V5090

## CONTROLS

### Control and indicators



- ① **MAIN POWER switch**  
Press to switch the main power ON/OFF.
- ② **REMOTE POWER key**  
Press to switch over the STANDBY/ON modes when the MAIN POWER is ON.
- ③ **STANDBY indicator**  
Lights when the SRS 3D system is ON.
- ④ **SPEAKERS indicator**  
Lights when the speakers are ON.
- ⑤ **STEREO key**  
Press to turn the surround mode OFF.
- ⑥ **DOLBY PRO LOGIC key**
- ⑦ **DOLBY 3 STEREO key**
- ⑧ **SRS 3D key**
- ⑨ **INPUT SELECTOR knob**  
Rotate to select the input source.
- ⑩ **VOLUME CONTROL knob**
- ⑪ **PHONES jack**  
Plug headphones into this jack.
- ⑫ **AUTO key**  
Press to select the tuning mode from the auto tuning and manual tuning modes. Press and hold the AUTO key for more than 2 seconds to switch the VIDEO1 display to another input display.
- ⑬ **SPEAKERS key**  
Press to turn the speakers ON and OFF.
- ⑭ **DIRECT key**  
Press when tuning a broadcast station by entering the digits of its frequencies.
- ⑮ **MEMORY key**  
Press when registering a broadcast station in the preset memory.
- ⑯ **Numeric keys (1 to 0, +10)**
- ⑰ **BAND key**  
Press to switch the broadcasting band.
- ⑱ **DISPLAY key**  
Press to switch the displayed information between the surround mode display and input selector display. Press and hold the DISPLAY key for more than 2 seconds to switch the display brightness.
- ⑲ **TUNING keys (V, A)**  
Press to select a radio station.
- ⑳ **TAPE 2 MONITOR key**  
Press to monitor the sound being recorded, etc.
- ㉑ **N.B. key**  
Press to compensate for the insufficiency in the base sound.
- ㉒ **P.CALL keys (V, A)**  
Press to select one of the preset stations.
- ㉓ **SOURCE DIRECT key**  
Press to listen to the source sound with a higher sound quality.

### STANDBY position of the REMOTE POWER key

When the STANDBY indicator of this unit is lit after its power cord has been plugged into wall outlet and the MAIN POWER switch has been pressed to ON, a small amount of current is supplied to back up the internal memory of the unit. This status is referred to as the standby mode of the unit. While the STANDBY indicator is lit, the POWER can be switched between ON and STANDBY from the remote control unit. When the unit is not to be used for a long period of time, press the MAIN POWER key to OFF.

# 105VR/KR-V5090

## CONTROLS

### Operation of remote control unit

**Model: RC-R0505**  
Infrared ray system

**Numeric keys**  
Used as the numeric keys of the input source component being selected.

**INPUT keys**  
Press to select the input.

**CENTER MODE key**  
Press to select the center mode in the DOLBY PRO LOGIC surround mode.

**SETUP key**  
Press to set up the balance or surround play.

**LEVEL CONTROL keys**  
Press to adjust the tone or during setup of the surround mode.

**POWER key**  
Press to switch ON/OFF the power of this unit as well as the KENWOOD components connected to it through system control cords.

**MUTE key**  
Press to mute sound temporarily.

**VOLUME CONTROL keys**  
Press to adjust the volume.

**LISTEN MODE key**  
Press to select the type of the surround mode.

**SOUND key**  
Press to adjust the tone.

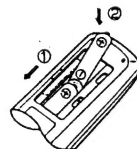
Refer to the remote control key correspondence table on the next page.

### Loading batteries

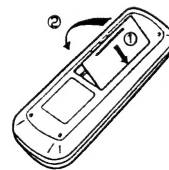
① Remove the cover.

② Insert batteries.

③ Close the cover.



● Insert two AA-size (R6 / SUM-31) batteries as indicated by the polarity marking.



# 105VR/KR-V5090

## ADJUSTMENT

### FM SECTION INPUT SELECTOR : FM MODE

#### X05-4700

NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	DISCRIMINATOR	(A) 98 MHz, 60dBu (ANT INPUT) 1 kHz, $\pm 40$ kHz DEV E/T/Q TYPE 1 kHz, $\pm 75$ kHz DEV (OTHER TYPE)	Connect a DC voltmeter between pin 1 and pin 2 of CN2.	MCNO 98.0 MHz	L31  L32 (EXCEPT K/P)	0V  Minimum distortion.	(a)
2	DISTORTION (STEREO)	(B) 98 MHz, 60dBu (ANT INPUT) 1 kHz, $\pm 40$ kHz DEV E/T/Q TYPE 1 kHz, $\pm 67.5$ kHz DEV PILOT $\pm 7.5$ kHz DEV OTHER TYPE	(E)	AUTO 98.0 MHz	T 1 (A1)	Minimum distortion.	(a)

#### X05-4690

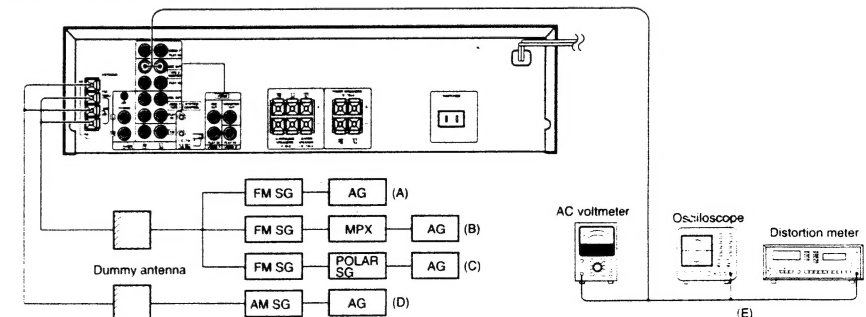
NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	DISTORTION (STEREO)	(B) 98 MHz, 60dBu (ANT INPUT) 1 kHz, $\pm 40$ kHz DEV PILOT $\pm 7.5$ kHz DEV	(E)	AUTO 98.0 MHz	T 1 (A1)	Minimum distortion.	(a)

### POLAR UNIT

#### X04-1313 Q TYPE (65MHz-74MHz BAND)

NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	VCO	(C) 69 MHz, 60dBu (ANT INPUT) 1 kHz, 0 kHz DEV SUB, 0 kHz DEV	Connect a frequency counter to VCO monitor (CN2).	AUTO 69 MHz	VR 2	Adjust it the frequency counter reads 31.25 kHz $\pm 100$ kHz.	
2	SEPARATION	(C) 69 MHz, 60dBu (ANT INPUT) 1 kHz, 40 kHz DEV SUB, 10 kHz DEV Select : L or R	Connect a oscilloscope to TUNER OUT (CN6).	AUTO 69 MHz	TC 1	Minimum crosstalk.	
3	SEPARATION	(C) SAME AS ABOVE	Connect a oscilloscope to TUNER OUT (CN6).	AUTO 69 MHz	VR 1	Minimum crosstalk.	

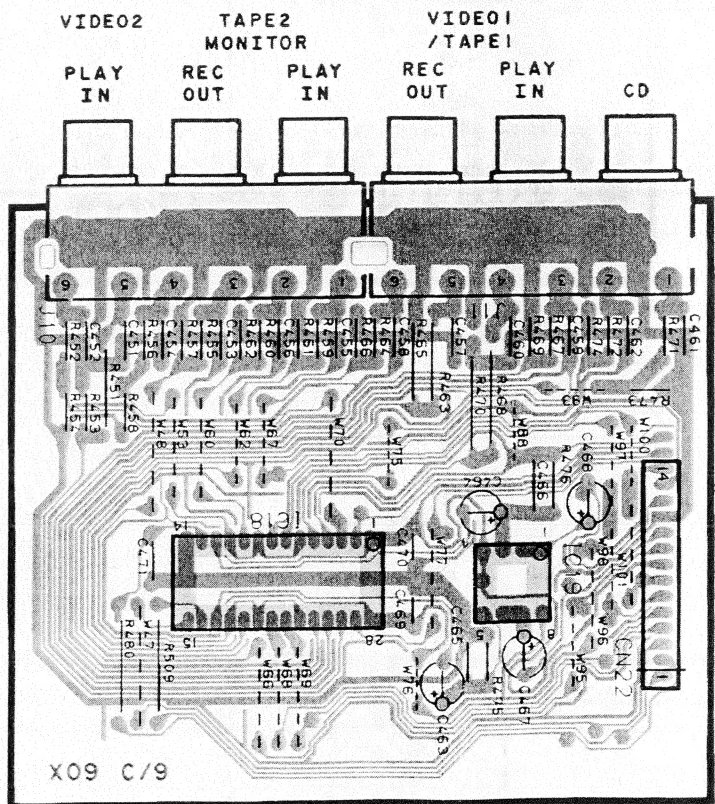
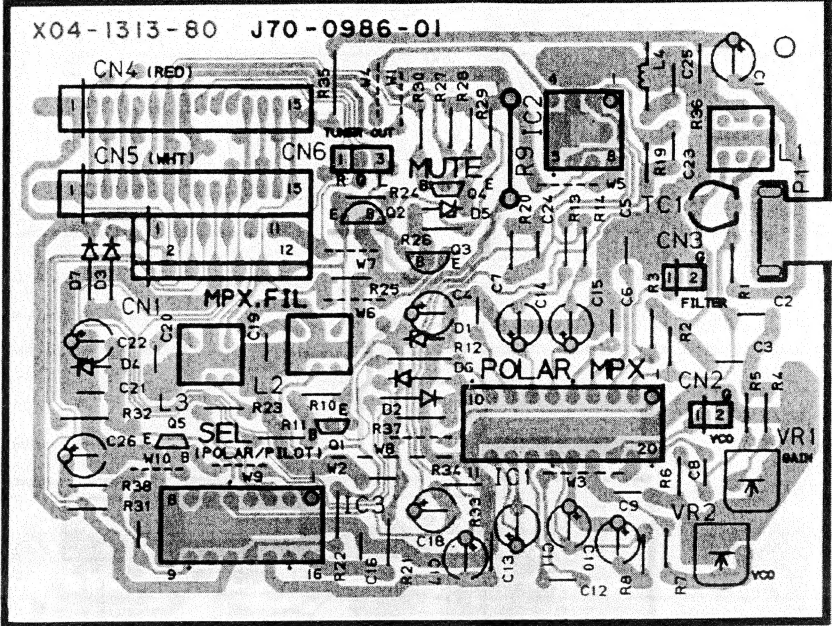
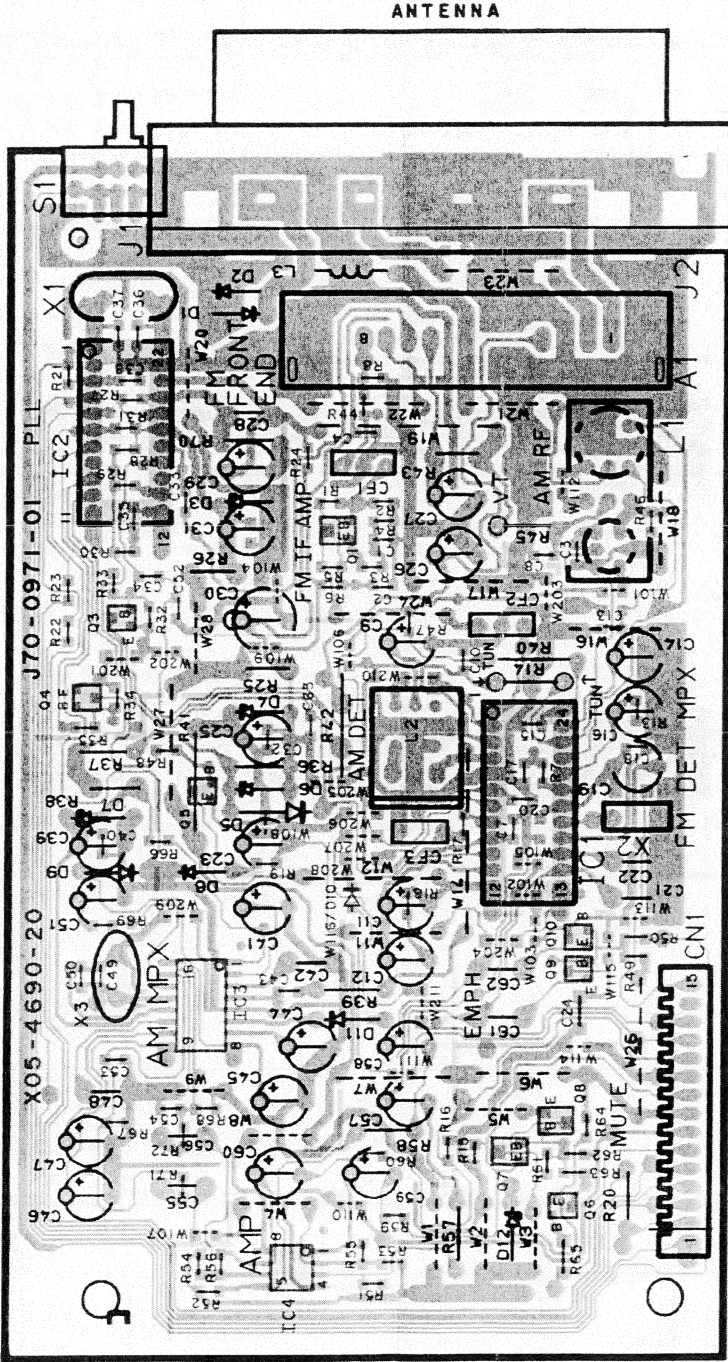
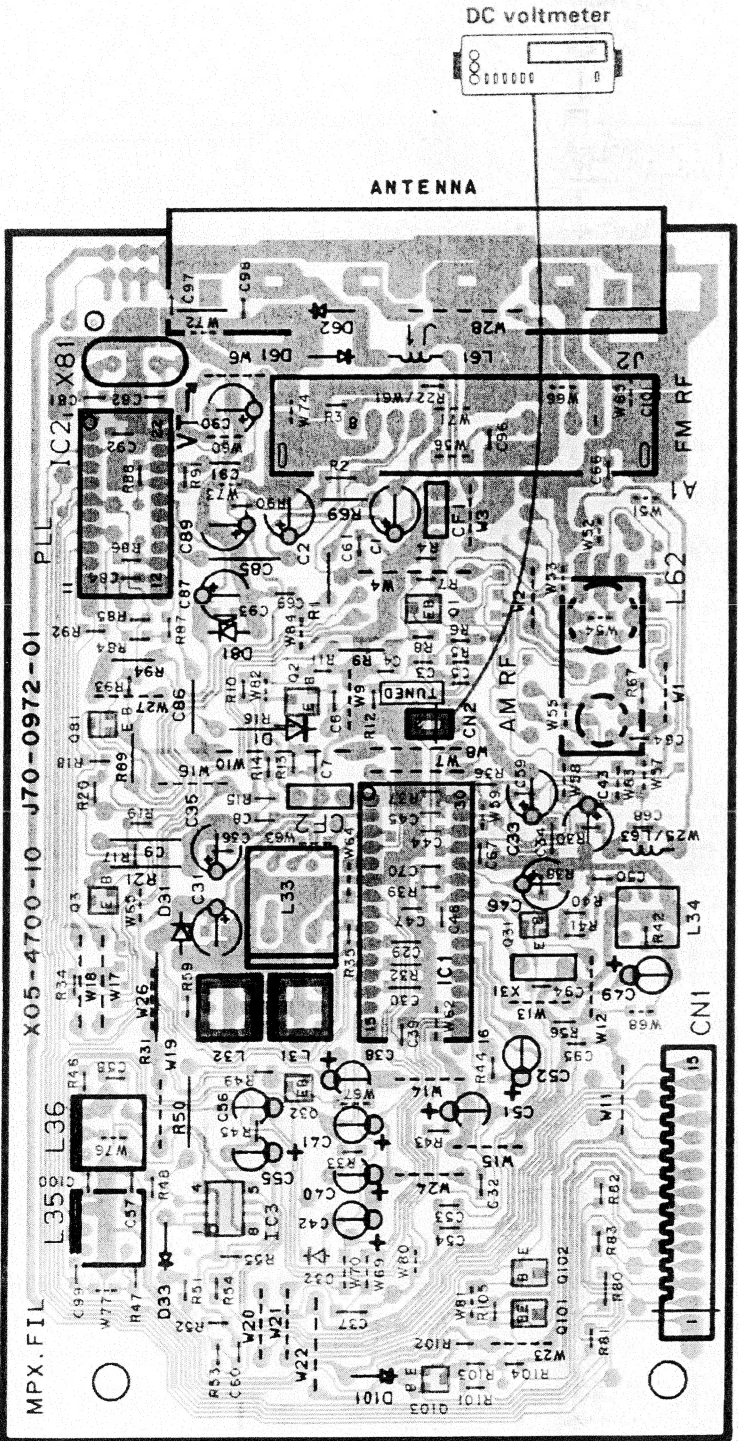
### INSTRUMENT CONNECTION





# PC BOARD(Component side view)

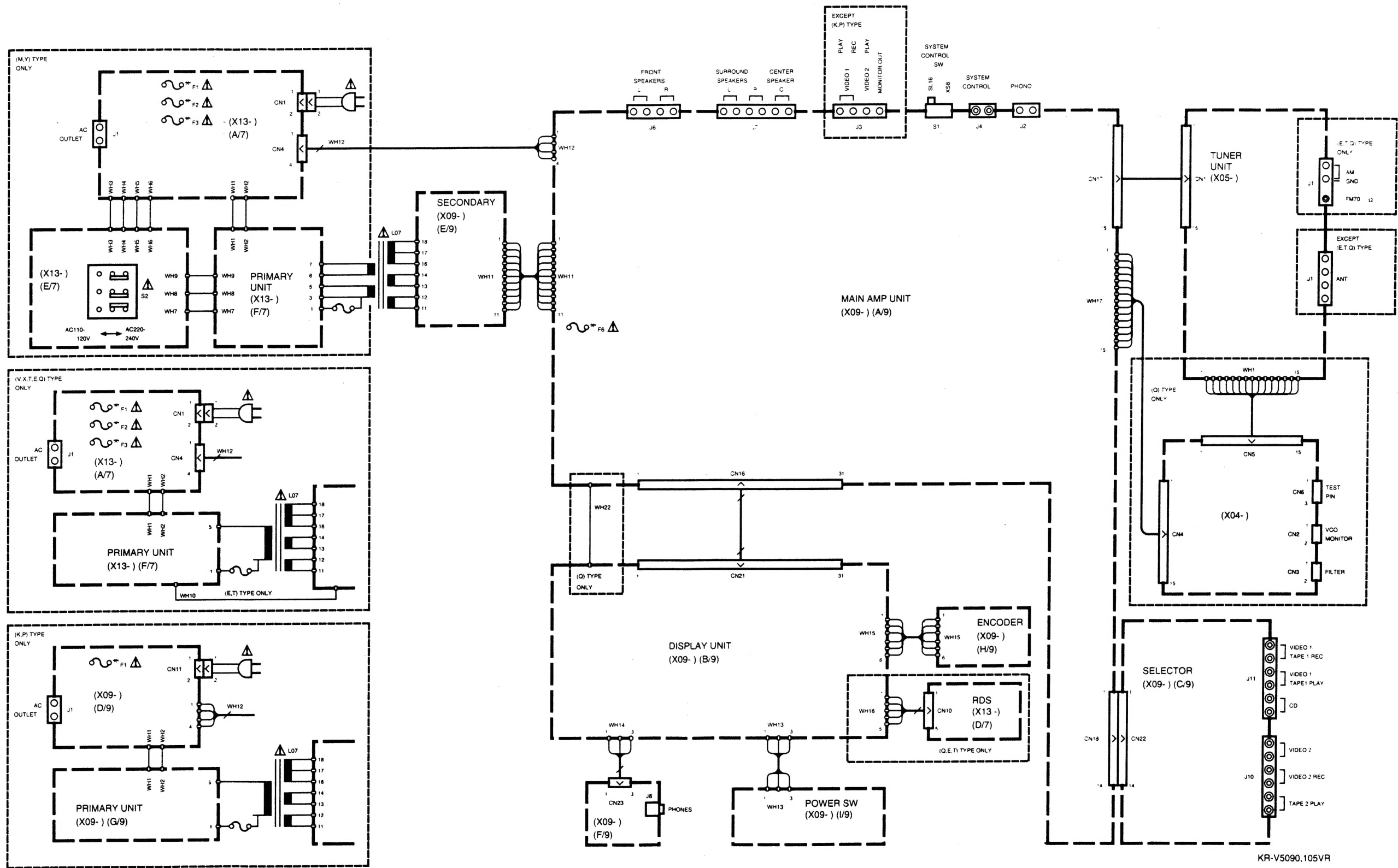
(a) Discriminator : L31 0V  
L32 Minimum distortion. (Except K,P)





# 105VR/KR-V5090

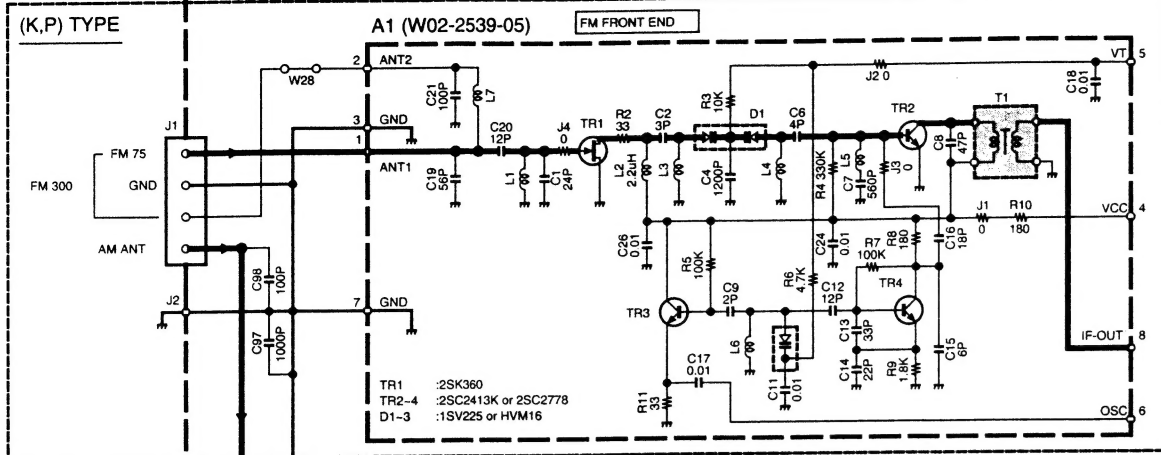
## WIRING DIAGRAM



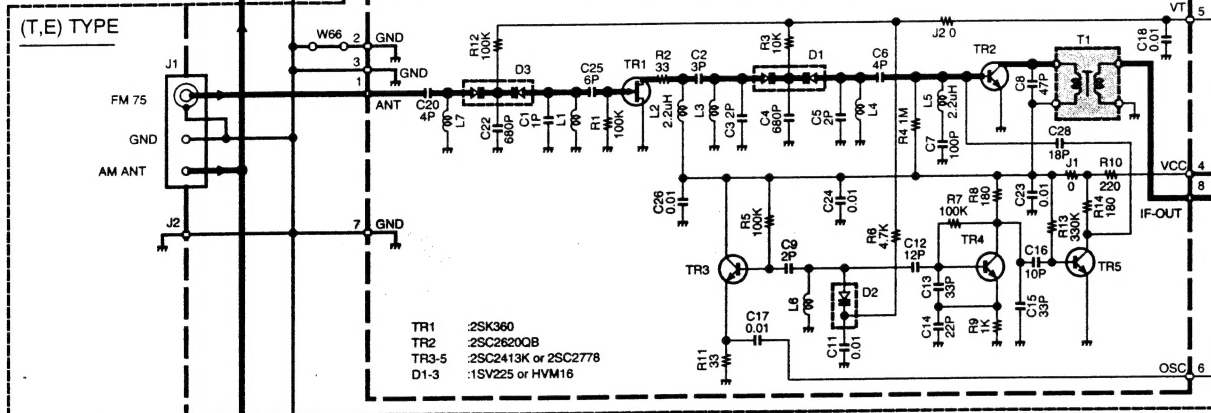
KR-V5090,105VR

(X05-470X-XX) : K,P,T,E,Q TYPE

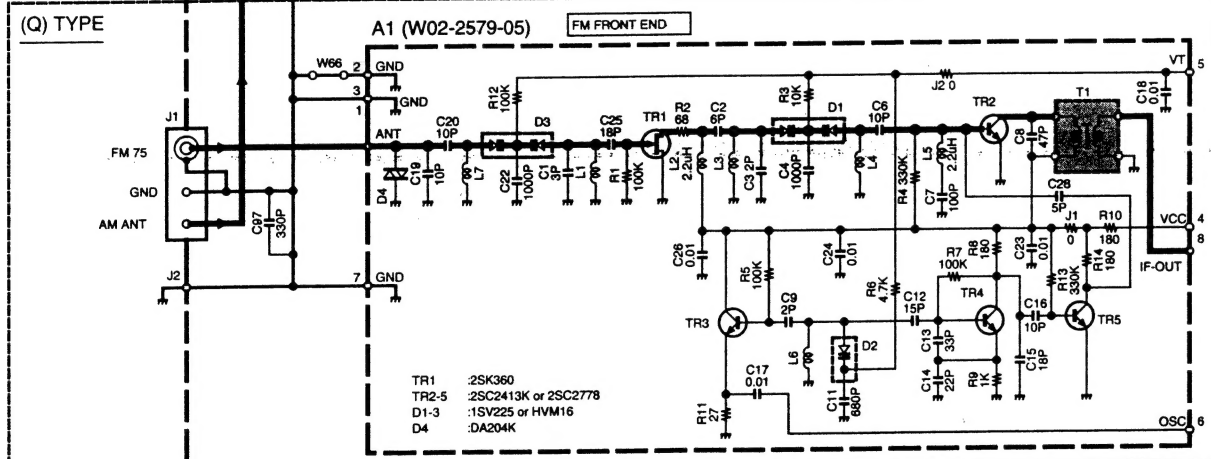
(K,P) TYPE



(T,E) TYPE

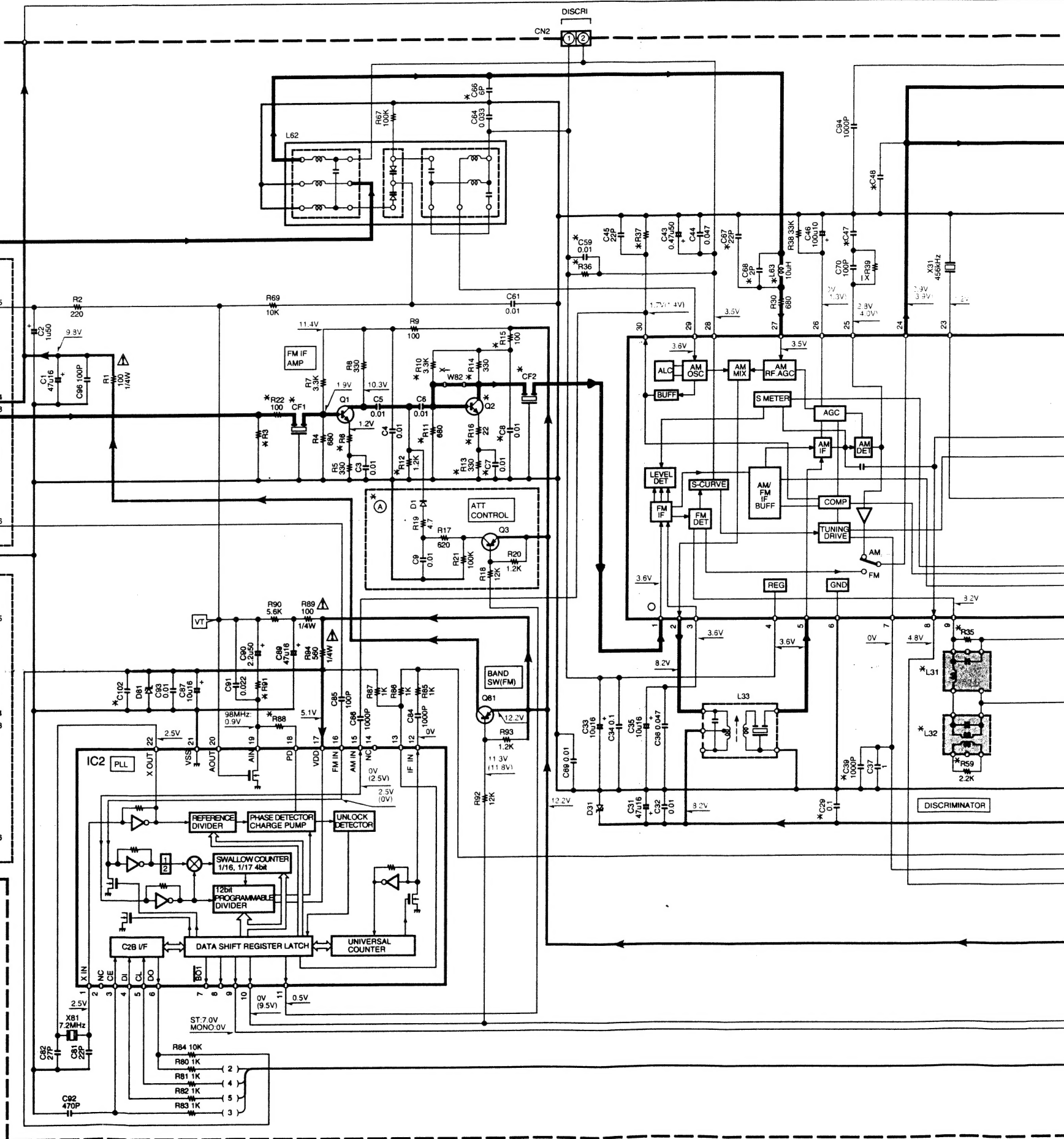


(Q) TYPE



KR-V5090 (X05-470X-XX)

DESTINATION		UNIT	Ⓐ	Ⓑ	C7.8	C29.59	C39.59	C47	C48	C53.54	C57.58	C102	L31	L32	L35	Q2	R3	R6	R10-16	R22	R35	R37	R39	R43	R45	R46	R47	R48	W68	W76	CF1.2	CN1	WH1
COUNTRY	ABB	No.			66-68	103	99,100																										
U.K.	T	2-71	YES	YES	YES	NO	NO	8800P	1000P	0.022	YES	NO	L30-0929-05	YES	YES	YES	3.3K	22	YES	W61	33K	3K	47K	2.2K	1.2K	1.2K	3.9K	1K	NO	NO	L72-0596-05	YES	NO
EUROPE	E						YES		100P		NO	1000P		NO	NO	NO																	
RUSSIA	Q	3-81	NO	NO	NO																												



**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in ( ) is actual reading measured in the AM made.

MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

(K,P,T,E TYPE)  
X09-A/9  
-CN17

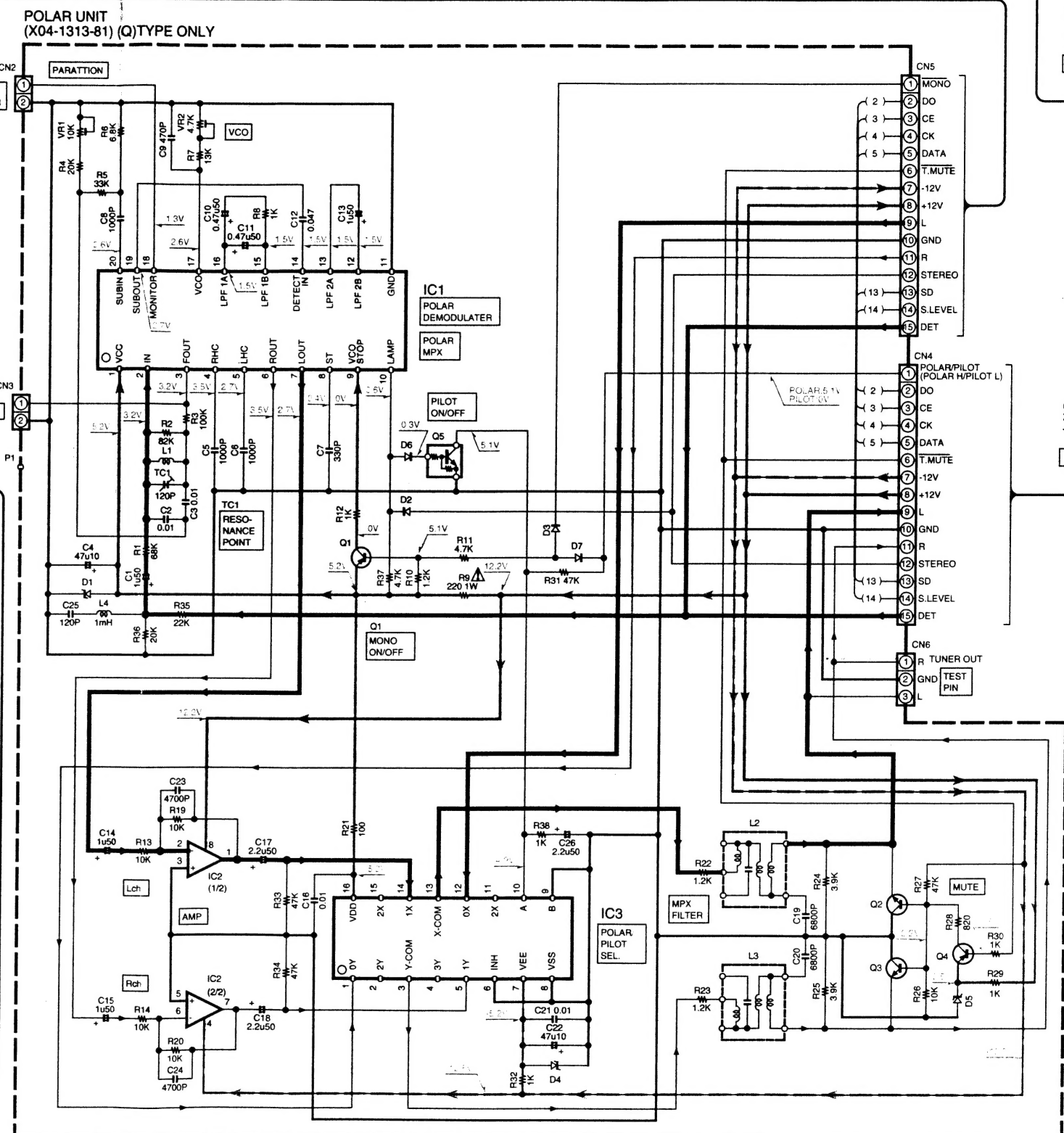
3/4

A

(T,E TYPE)  
X13-D/7-1  
(VCC)

4/4

H



X(04 - )	
IC1	: IR3R42
IC2	: NJM4565D
IC3	: TC4052BP
Q1,4	: 2SA933AS(Q,R) or 2SA1175(F,E)
Q2,3	: 2SC287(B)
Q5	: DTC124ESA or UN4212
D1,4	: MTJZJ 1(B) or UZ-5.1BSB
D2,3,6,7	: 1SS133 or HSS104
D5	: MTJZJ 3(B) or UZ-3.BSB

KR-V5090/,105VR(K) (1/4)

**105VR/KR-V5090**  
KENWOOD

Y05-3270-10



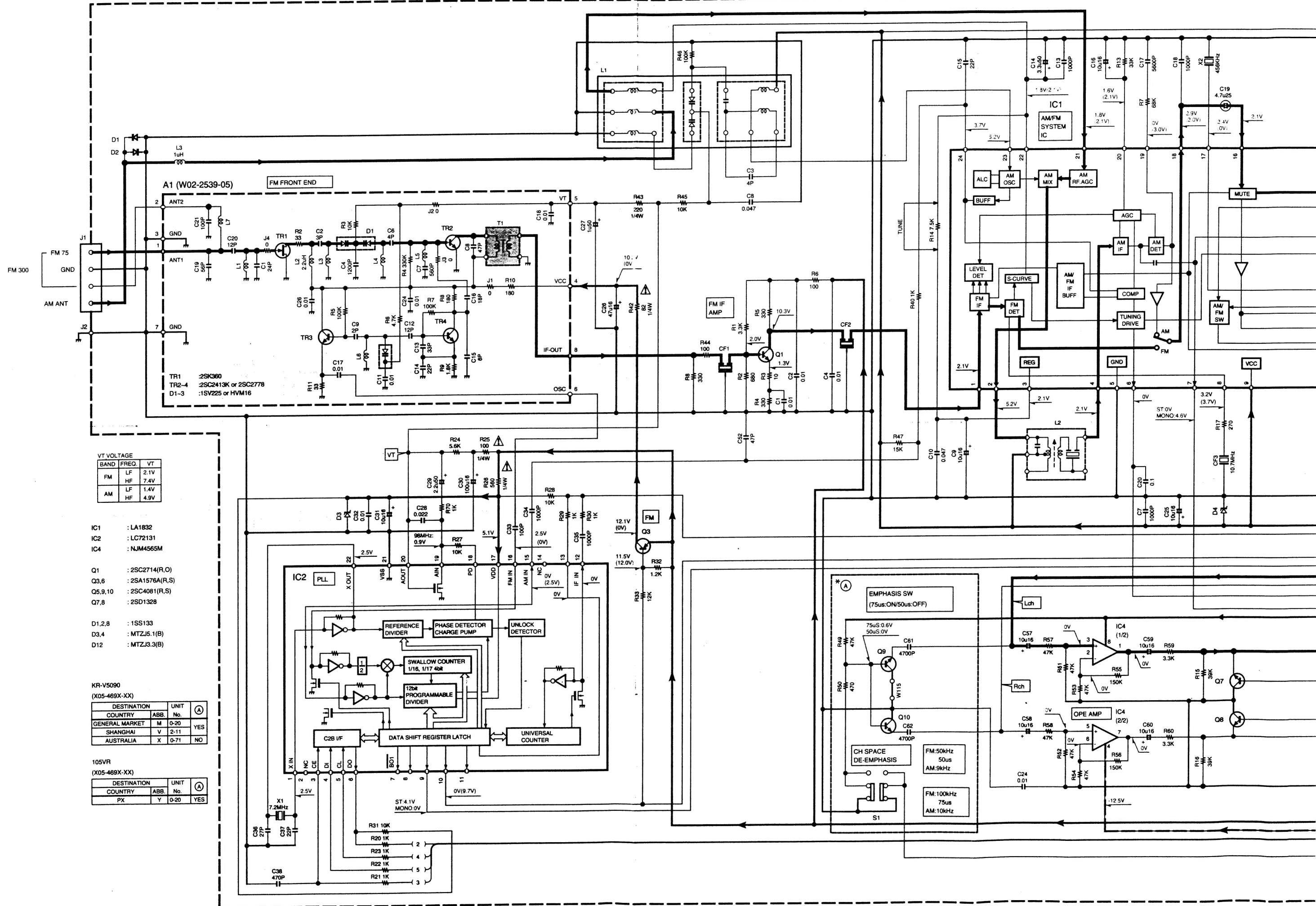
10







(X05-469X-XX) : M,V,X,Y TYPE



VT VOLTAGE		
BAND	FREQ.	VT
FM	LF	2.1V
	HF	7.4V
AM	LF	1.4V
	HF	4.9V

IC1 : LA1832  
IC2 : LC72131  
IC4 : NJM4565M

Q1 : 2SC2714(R,O)  
Q3,6 : 2SA1576A(R,S)  
Q5,9,10 : 2SC4081(R,S)  
Q7,8 : 2SD1328

D1,2,8 : 1SS133  
D3,4 : MTZJ5.1(B)  
D12 : MTZJ3.3(B)

KR-V5090  
(X05-469X-XX)

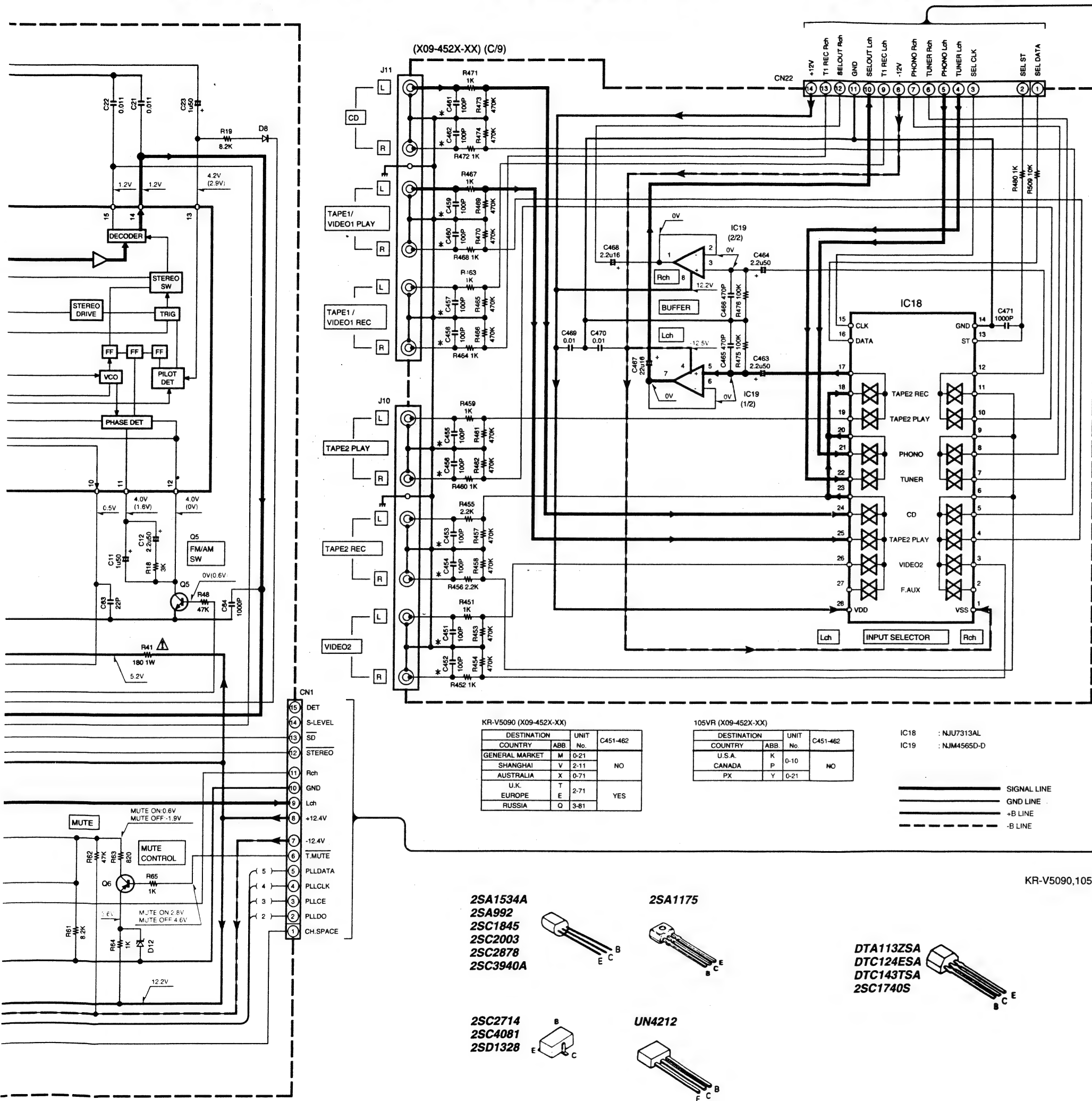
DESTINATION	UNIT	(A)
COUNTRY	ABB. No.	
GENERAL MARKET	M 0-20	YES
SHANGHAI	V 2-11	YES
AUSTRALIA	X 0-71	NO

105VR

(X05-469X-XX)

DESTINATION	UNIT	(A)
COUNTRY	ABB. No.	
PX	Y 0-20	YES





X09-A/9  
-CN18  
3/4  
D

**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in ( ) is actual reading measured in the AM made.

MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

NJM4580D-D

NJM2904M  
NJM4565M

LA1836

LC72131

M62430FP

LA2786

NJM2279D

LA1832  
LV1016

NJU7313AL

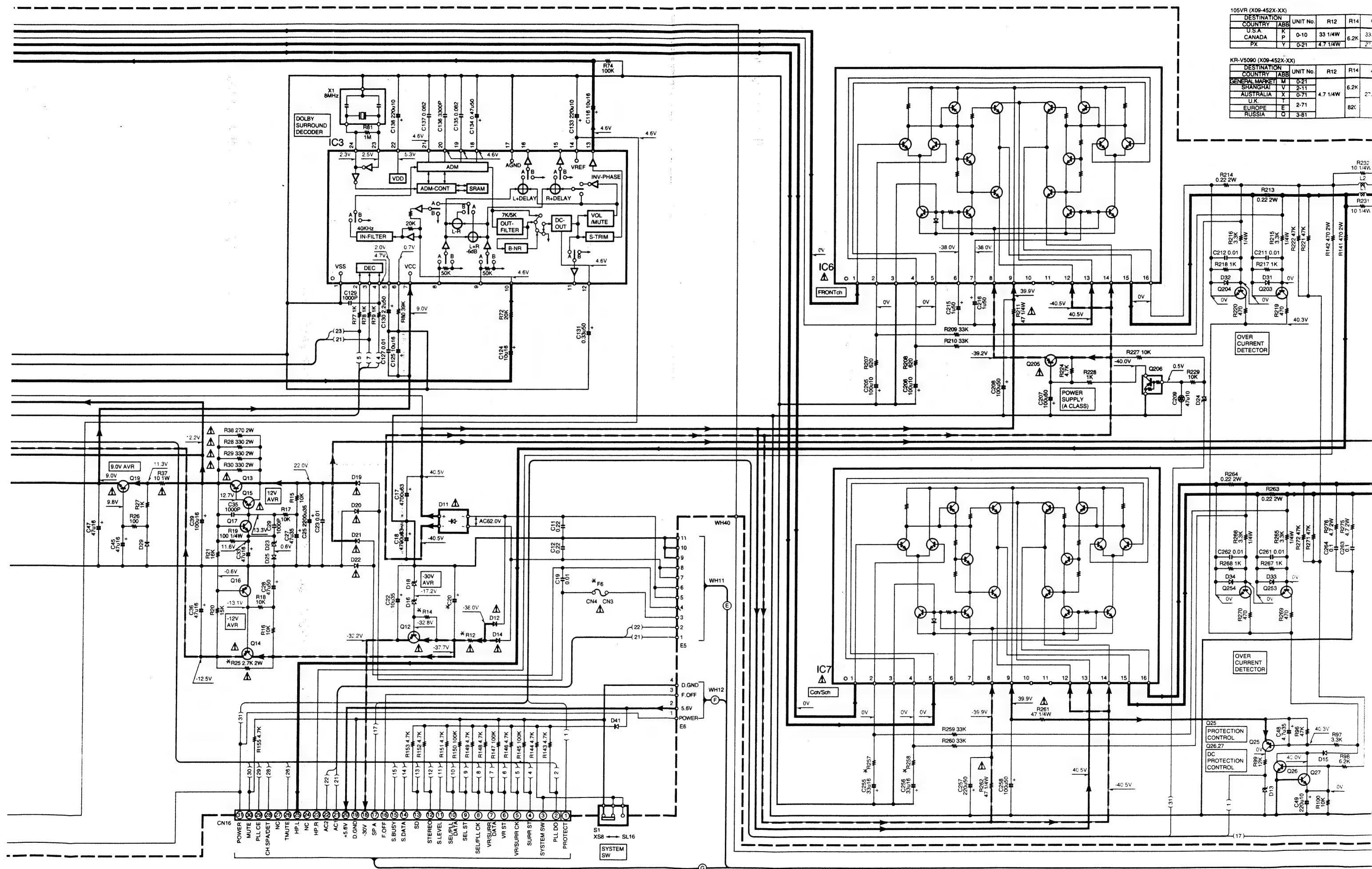
NJM4565D  
NJM4565D-D  
X24C04P

TC4052BP  
TC9215AP

SAA6579

X09-A/7  
-CN17  
3/4  
C

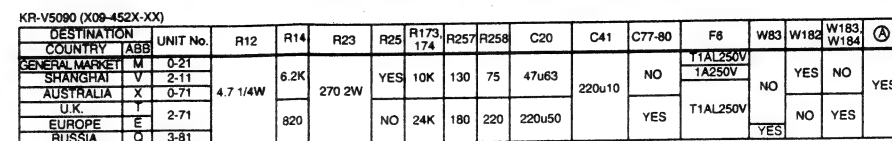





105VR (X09-452X-XX)				
DESTINATION	COUNTRY	ABB	UNIT No.	R12 R14
U.S.A.	K	P	0-10	33 1/4W 6.2K
CANADA	P	P	0-21	4.7 1/4W 27K

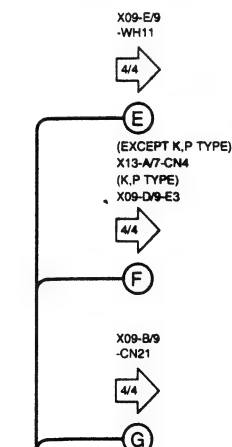
KR-V5090 (X09-452X-XX)				
DESTINATION	COUNTRY	ABB	UNIT No.	R12 R14
GENERAL MARKET	M	V	0-21	6.2K
SHANGHAI	V	X	2-11	4.7 1/4W 27K
AUSTRALIA	X	T	0-71	6.2K
U.K.	T	E	2-71	6.2K
EUROPE	E	C	3-81	6.2K





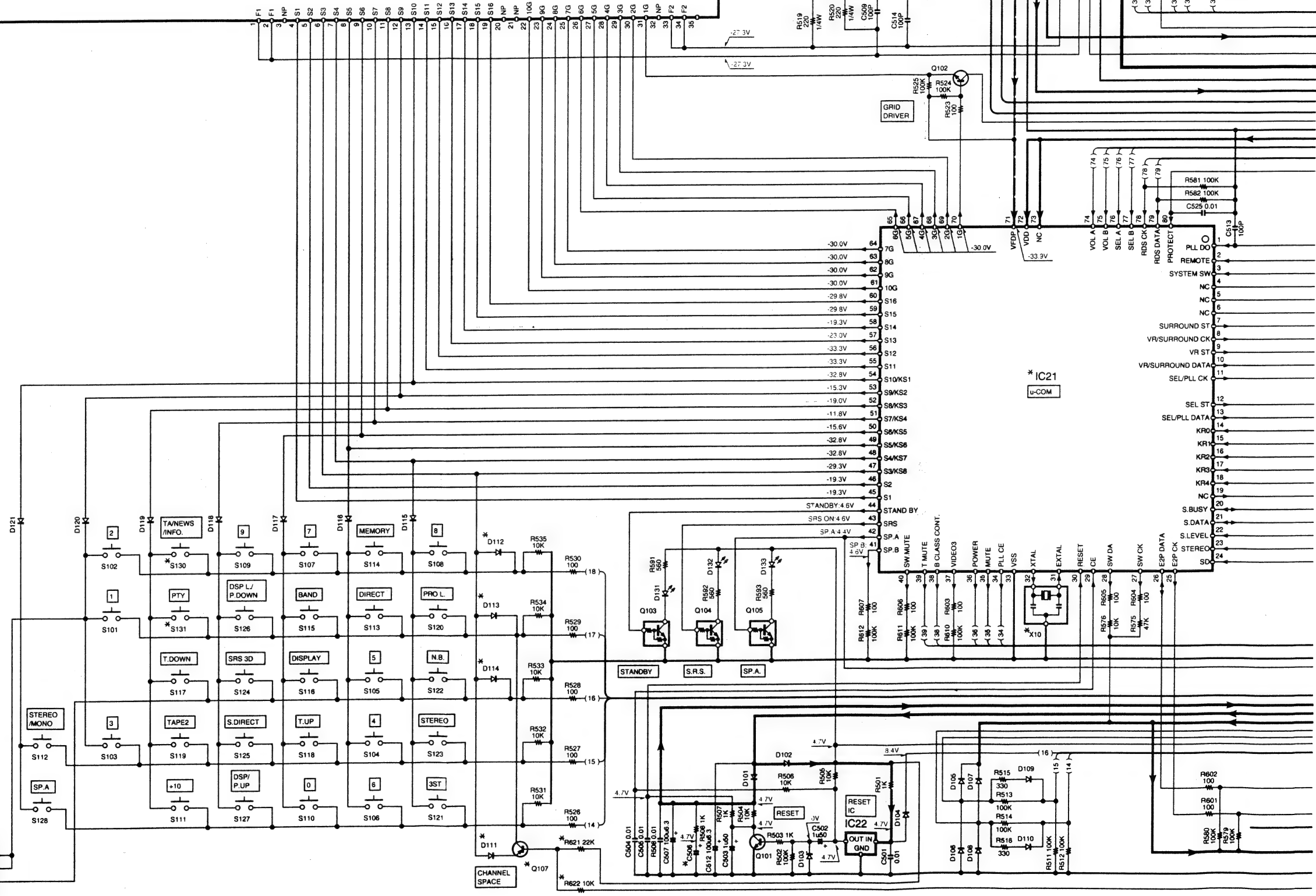
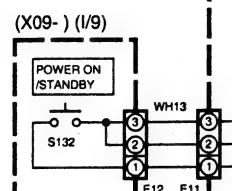
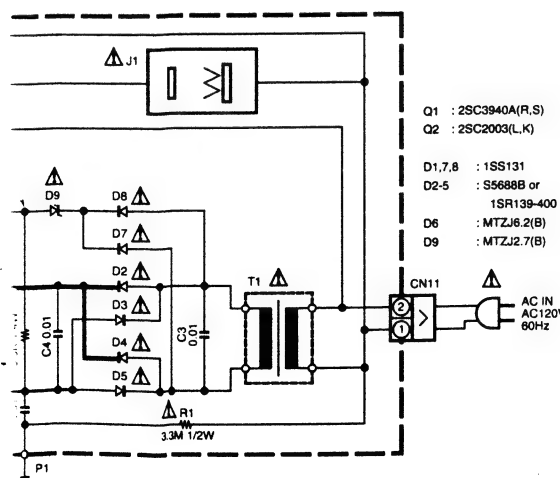
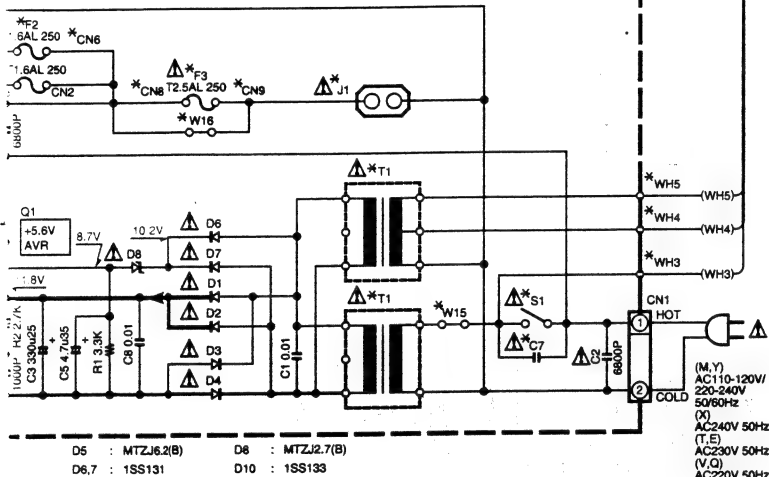
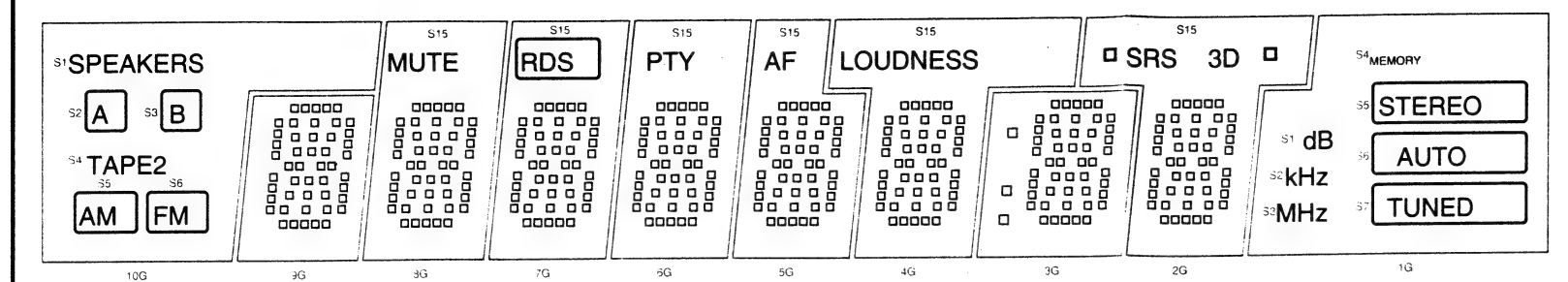
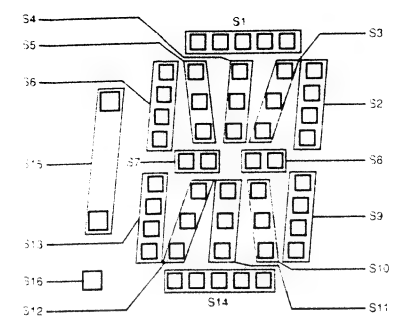
IC1	:NUM4279D
IC2	:LA2786
IC3	:LV1016
IC4	:TC9215AP
IC5	:M62430FP
IC6,7	:STK499-070
IC8	:NUM45800-D
D10,15,25,30-34	:1SS131
D11	:RBV-602LA
D12,14,19-22	:SE5888 or 1SR139-400
D13,26,27	:MTZJ5,1(B)
D16,18	:MTZJ15(B)
D17	:MYZ3,9(B)
D23,51,52	:MTZJ11(B)
D24	:MTZJ2,7(B)
D29	:MTZ10(B)
D41	:1SS133
Q12	:2SA1534A(R,S)
Q13	:2SD2525
Q14	:2SB1640
Q15,17	:2SC1740S(Q,R)
Q16,29,30	:2SA933AS(Q,R)
Q18,21-24,201,202, 251,252,301,302	:2SC2878(B)
Q19	:2SC3940A(R,S)
Q25,205	:2SA992(F,E)
Q26,27,203,204, 253,254	:2SC1845(F,E)
Q28	:DTC1132SA
Q206	:DTA1132SA

 SIGNAL LINE  
 GND LINE  
 +B LINE  
 -B LINE





ED1







\* New Parts  
Parts without **Parts No.** are not supplied.  
Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.  
Teile ohne **Parts No.** werden nicht geliefert.

1

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
<b>105VR/KR-V5090</b>						
601	1A	*	A01-3378-01	METALLIC CABINET	KPY MVX TEQ	
602	1A	*	A09-0356-08	BATTERY COVER		
604	2A	*	A60-1023-01	PANEL		
604	2A	*	A60-1024-01	PANEL		
604	2A	*	A60-1025-01	PANEL		
605	1A	*	A70-1107-05	REMOTE CONTROLLER ASSY		
610	2A	*	B07-2298-02	ESCUTCHEON	KPYMVX TEQ	
611	2A	*	B10-2358-02	FRONT GLASS		
611	2A	*	B10-2359-02	FRONT GLASS		
612	2A	*	B11-0339-03	COLOR FILTER	X K TEQ	
615	2A	*	B43-0302-04	KENWOOD BADGE		
			B46-0086-53	WARRANTY CARD		
			B46-0197-00	QUESTIONNAIRE CARD		
			B46-0310-03	WARRANTY CARD		
			B46-0329-03	WARRANTY CARD	V	
			B46-0330-03	WARRANTY CARD	KY	
			B46-0336-03	WARRANTY CARD	P	
			B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
			B58-0964-13	CAUTION CARD (UL)	KY	
			B58-0965-13	CAUTION CARD (T,X)	XT	
			B58-0966-13	CAUTION CARD (ELM,PL)	MVE	
			B58-0967-03	CAUTION CARD (PL)	P	
			B58-1526-03	CAUTION CARD (P4,ORI,A4,1(Q)	Q	
			B59-1104-00	SERVICE DIRECTORY	Y	
		*	B60-2983-00	INSTRUCTION MANUAL(ENG)	KPY	
		*	B60-2984-00	INSTRUCTION MANUAL(FRE)	P	
		*	B60-2985-00	INSTRUCTION MANUAL(FRE/NETH)	E	
		*	B60-2986-00	INSTRUCTION MANUAL(ITY/SPN)	E	
		*	B60-2987-00	INSTRUCTION MANUAL(GEN)	E	
		*	B60-2988-00	INSTRUCTION MANUAL(ENG)	T	
		*	B60-2989-00	INSTRUCTION MANUAL(SPN)	M	
		*	B60-2990-00	INSTRUCTION MANUAL(CHN)	V	
		*	B60-2991-00	INSTRUCTION MANUAL(TWN)	M	
		*	B60-2992-00	INSTRUCTION MANUAL(PLD/RUS)	Q	
		*	B60-3072-00	INSTRUCTION MANUAL(ENG)	MX	
616	1B		D21-1829-13	EXTENSION SHAFT	MVXTEQ	
Δ 620	1A		E03-0115-05	AC PLUG ADAPTER	M	
Δ 621	1C		E30-2605-05	AC POWER CORD	Y	
Δ 621	1C		E30-2717-05	AC POWER CORD	X	
Δ 621	1C		E30-2721-05	AC POWER CORD	T	
Δ 621	1C		E30-2824-05	AC POWER CORD	V	
Δ 621	1C	*	E30-2842-05	AC POWER CORD	MEQ	
Δ 621	1C	*	E30-2849-05	AC POWER CORD	KP	
622	2B	*	E35-1720-05	FLAT CABLE		
			G11-2066-04	CUSHION	EQ KPYMVX EQ	
			G11-2221-04	CUSHION		
			G11-2242-04	CUSHION		
			G11-2251-04	CUSHION		
		*	H10-7250-12	POLYSTYRENE FOAMED FIXTURE		
		*	H10-7250-12	POLYSTYRENE FOAMED FIXTURE		
		*	H10-7251-12	POLYSTYRENE FOAMED FIXTURE		

L : Scandinavia K : USA P : Canada R : Mexico  
Y : PX(Far East, Hawaii) T : Europe E : Europe G : Germany  
Y : AAFES(Europe) X : Australia M : Other Areas

Δ indicates safety critical components.

\* New Parts  
Parts without **Parts No.** are not supplied.  
Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.  
Teile ohne **Parts No.** werden nicht geliefert.

2

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
		*	H10-7251-12	POLYSTYRENE FOAMED FIXTURE	KPYMVX	
		*	H10-7252-12	POLYSTYRENE FOAMED FIXTURE	T	
		*	H10-7253-12	POLYSTYRENE FOAMED FIXTURE	T	
		*	H11-0080-04	POLYSTYRENE FOAMED BOARD	X	
		*	H13-0231-04	CARTON BOARD		
			H25-0232-04	PROTECTION BAG (235X350X0.03)	EQ	
			H25-0232-04	PROTECTION BAG (235X350X0.03)	KPYMVX	
			H25-0391-04	PROTECTION BAG	T	
			H25-0651-04	PROTECTION BAG	KPY	
		*	H50-2163-04	ITEM CARTON CASE		
		*	H50-2164-04	ITEM CARTON CASE	T	
		*	H50-2273-04	ITEM CARTON CASE	M	
		*	H50-2274-04	ITEM CARTON CASE	V	
		*	H50-2309-04	ITEM CARTON CASE	XE	
		*	H50-2310-04	ITEM CARTON CASE	Q	
632	2C		J02-1148-13	FOOT (D=46,H=14.5)		
635	2C		J19-5787-04	UNIT HOLDER		
636	2C		J19-5788-04	UNIT HOLDER		
638	1B	*	J30-0466-04	SPACER	Q	
638	1B	*	J30-0466-04	SPACER	Y	
Δ 639	1C		J42-0083-05	POWER CORD BUSHING	Q	
			J21-6424-04	MOUNTING HARDWARE	Q	
			J61-0070-05	WIRE BAND	Y	
			J61-0070-05	WIRE BAND	Y	
			J61-0307-05	WIRE BAND	Y	
642	1B		K27-2185-04	KNOB (BUTTON)	MVXTEQ	
643	2B		K29-6321-04	KNOB	TEQ	
644	2A		K29-6322-04	KNOB		
645	2A	*	K29-6508-02	KNOB		
646	2B	*	K29-6509-04	KNOB		
Δ 650	1B	*	L07-2243-05	POWER TRANSFORMER	KP	
Δ 650	1B	*	L07-2244-05	POWER TRANSFORMER	YM	
Δ 650	1B	*	L07-2245-05	POWER TRANSFORMER	X	
Δ 650	1B	*	L07-2246-05	POWER TRANSFORMER	TE	
Δ 650	1B	*	L07-2294-05	POWER TRANSFORMER	V	
Δ 650	1B	*	L07-2295-05	POWER TRANSFORMER	Q	
651	1A		T90-0801-05	LEAD WIRE ANTENNA	KPYMVX	
651	1A		T90-0810-05	LEAD WIRE ANTENNA	TEQ	
652	1A		T90-0820-05	LOOP ANTENNA		
<b>MPX(X04-1313-81) Q type only</b>						
C1			CE04LW1H010M	ELECTRO	1.0UF	50WV
C2 ,3		*	C91-1568-05	FILM	0.01UF	J
C4			CE04LW1A470M	ELECTRO	47UF	10WV
C5 ,6			CQ93FMG1H102J	MYLAR	1000PF	J
C7			CC45FSL1H331J	CERAMIC	330PF	J
C8			CK45FB1H102K	CERAMIC	1000PF	K
C9			CQ93FCH1H471J	CERAMIC	470PF	J
C10 ,11			CE04LW1HR47M	ELECTRO	0.47UF	50WV
C12			CK45FF1H473Z	CERAMIC	0.047UF	Z
C13 -15			CE04LW1H010M	ELECTRO	1.0UF	50WV
C16			CK45FF1H103Z	CERAMIC	0.010UF	Z
C17 ,18			CE04LW1H2R2M	ELECTRO	2.2UF	50WV
C19 ,20			CQ93FMG1H682J	MYLAR	6800PF	J
C21			CK45FF1H103Z	CERAMIC	0.010UF	Z

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3

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C22 C23 ,24 C25 C26 TC1			CE04LW1A470M CQ93FMG1H472J CC45FSL1H121J CE04LW1H2R2M C05-0463-05	ELECTRO 47UF 10WV MYLAR 4700PF J CERAMIC 120PF J ELECTRO 2.2UF 50WV CERAMIC TRIMMER CAPACITOR(120P		
CN2 ,3 CN4 CN5 CN6		*	E40-4871-05 E40-4372-05 E40-3259-05 E40-4872-05	PIN ASSY PIN ASSY PIN ASSY PIN ASSY		
L1 L2 ,3 L4		*	L39-1350-05 L79-1236-05 L40-1021-14	PEAKING COIL LC FILTER SMALL FIXED INDUCTOR(1.0MH,K)		
R9 VR1 VR2			RS14KB3A221J R12-3685-05 R12-1619-05	FL-PROOF RS 220 J 1W TRIMMING POT.(10K) TRIMMING POT.(4.7K)		
D1 D1 D2 ,3 D2 ,3 D4			MTZJ5.1(B) UZ-5.1BSB HSS104 1SS133 MTZJ5.1(B)	ZENER DIODE ZENER DIODE DIODE DIODE ZENER DIODE		
D4 D5 D5 D6 ,7 D6 ,7			UZ-5.1BSB MTZJ3.3(B) UZ-3.3BSB HSS104 1SS133	ZENER DIODE ZENER DIODE ZENER DIODE DIODE DIODE		
IC1 IC2 IC3 Q1 Q1		*	IR3R42 NJM4565D TC4052BP 2SA1175(F,E) 2SA933AS(Q,R)	ANALOGUE IC ANALOGUE IC IC(4CH MPX/DE-MPX) TRANSISTOR TRANSISTOR		
Q2 ,3 Q4 Q4 Q5 Q5			2SC2878(B) 2SA1175(F,E) 2SA933AS(Q,R) DTC124ESA UN4212	TRANSISTOR TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR		
<b>TUNER(X05-4690-20) Y,M,X,V type only</b>						
C1 ,2 C3 C4 C7 C8			CK73FB1H103K CK73FCH1H040C CK73FB1H103K CK73FB1H102K CK73FB1H473K	CHIP C 0.010UF K CHIP C 4.0PF C CHIP C 0.010UF K CHIP C 1000PF K CHIP C 0.047UF K		
C9 C10 C11 C12 C13			CE04LW1C100M CK73FB1H473K CE04LW1H010M CE04LW1H2R2M CK73FB1H102K	ELECTRO 10UF 16WV CHIP C 0.047UF K ELECTRO 1.0UF 50WV ELECTRO 2.2UF 50WV CHIP C 1000PF K		
C14 C15 C16 C17			CE04LW1H3R3M CC73FCH1H220J CE04LW1C100M CK73FB1H562K	ELECTRO 3.3UF 50WV CHIP C 22PF J ELECTRO 10UF 16WV CHIP C 5600PF K		
C18 C19 C20 C21 ,22 C23			CK73FB1H102K CE04HW1E4R7M CK73FB1E104K CQ92FM1H113J CE04LW1H010M	CHIP C 1000PF K NP-ELEC 4.7UF 25WV CHIP C 0.10UF K MYLAR 0.011UF J ELECTRO 1.0UF 50WV		

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C24 C25 C26 C27 C28			CK73EB1H103K CE04LW1C100M CE04LW1C470M CE04LW1H010M CQ92FM1H223J	CHIP C 0.010UF K ELECTRO 10UF 16WV ELECTRO 47UF 16WV ELECTRO 1.0UF 50WV MYLAR 0.022UF J		
C29 C30 C31 C32 C33			CE04LW1H2R2M CE04LW1C101M CE04LW1C100M CK73FB1H103K CC73FSL1H101J	ELECTRO 2.2UF 50WV ELECTRO 100UF 16WV ELECTRO 10UF 16WV CHIP C 0.010UF K CHIP C 100PF J		
C34 ,35 C36 C37 C38 C52			CK73FB1H102K CC73FCH1H270J CC73FCH1H220J CK73FB1H471K CC73FCH1H470J	CHIP C 1000PF K CHIP C 27PF J CHIP C 22PF J CHIP C 470PF K CHIP C 47PF J		
C57 -60 C61 ,62 C63 C64			CE04LW1C100M CQ92FM1H472J CC73FCH1H220J CK73FB1H102K	ELECTRO 10UF 16WV MYLAR 4700PF J CHIP C 22PF J CHIP C 1000PF K	YMV	
CN1 J1	2C	*	E40-9831-05 E70-0079-05	SOCKET FOR PIN ASSY LOCK TERMINAL BOARD		
J2		*	F10-1074-04	SHIELDING PLATE		
CF1 ,2 CF3 L1 L2 L3			L72-0531-05 L72-0593-05 L39-1348-05 L30-0911-05 L40-1091-17	CERAMIC FILTER CERAMIC FILTER COMBINATION COIL AM IFT SMALL FIXED INDUCTOR(1UH)		
X1 X2		*	L77-2187-05 L78-0295-05	CRYSTAL RESONATOR(7.2MHZ) RESONATOR (456KHZ)		
R1 R2 R3 R4 ,5 R6			RK73FB2A332J RK73FB2A681J RK73FB2A100J RK73FB2A331J RK73FB2A101J	CHIP R 3.3K J 1/10W CHIP R 680 J 1/10W CHIP R 10 J 1/10W CHIP R 330 J 1/10W CHIP R 100 J 1/10W		
R7 R8 R13 R15 ,16 R17			RK73FB2A683J RK73FB2A331J RK73FB2A333J RK73FB2A393J RK73FB2A271J	CHIP R 68K J 1/10W CHIP R 330 J 1/10W CHIP R 33K J 1/10W CHIP R 39K J 1/10W CHIP R 270 J 1/10W		
R18 R19 R21 -23 R24 R25			RK73FB2A302J RK73FB2A822J RK73FB2A102J RK73FB2A562J RD14NB2E101J	CHIP R 3.0K J 1/10W CHIP R 8.2K J 1/10W CHIP R 1.0K J 1/10W CHIP R 5.6K J 1/10W RD 100 J 1/4W		
R26 R27 ,28 R29 ,30 R31			RD14NB2E561J RK73FB2A103J RK73FB2A102J RK73FB2A103J	RD 560 J 1/4W CHIP R 10K J 1/10W CHIP R 1.0K J 1/10W CHIP R 10K J 1/10W		
R32 R33 R41 R42 R43			RK73FB2A122J RK73FB2A123J RS14KB3A181J RD14NB2E820J RD14NB2E221J	CHIP R 1.2K J 1/10W CHIP R 12K J 1/10W FL-PROOF RS 180 J 1W RD 82 J 1/4W RD 220 J 1/4W		

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5

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R44			RK73FB2A101J	CHIP R 100 J 1/10W		
R46			RK73FB2A104J	CHIP R 100K J 1/10W		
R47			RK73FB2A153J	CHIP R 15K J 1/10W		
R48			RK73FB2A473J	CHIP R 47K J 1/10W	X	
R48, 49			RK73FB2A473J	CHIP R 47K J 1/10W	YMV	
R50			RK73FB2A471J	CHIP R 470 J 1/10W		
R51-54			RK73FB2A473J	CHIP R 47K J 1/10W		
R55, 56			RK73FB2A154J	CHIP R 150K J 1/10W		
R59, 60			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R61			RK73FB2A822J	CHIP R 8.2K J 1/10W		
R62			RK73FB2A473J	CHIP R 47K J 1/10W		
R63			RK73FB2A821J	CHIP R 820 J 1/10W		
R64			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R65			RK73EB2B102J	CHIP R 1.0K J 1/8W		
W101-106			R92-0670-05	CHIP R 0 OHM		
W108-114			R92-0670-05	CHIP R 0 OHM	X	
W108-116			R92-0670-05	CHIP R 0 OHM	YMV	
W116			R92-0670-05	CHIP R 0 OHM	X	
W201			R92-0679-05	CHIP R 0 OHM		
W202			R92-0670-05	CHIP R 0 OHM		
W203-208			R92-0679-05	CHIP R 0 OHM		
W210,211			R92-0679-05	CHIP R 0 OHM		
S1	1C		S62-0034-05	SLIDE SWITCH (DE-EMPHASIS)	YMV	
D1, 2			1SS133	DIODE		
D3, 4			MTZJ5.1(B)	ZENER DIODE		
D8			1SS133	DIODE		
D12			MTZJ3.3(B)	ZENER DIODE		
IC1			LA1832	ANALOGUE IC		
IC2			LC72131	MOS-IC		
IC4			NJM4565M	IC(OP AMP X2)		
Q1			2SC2714(R,O)	TRANSISTOR		
Q3			2SA1576A(R,S)	TRANSISTOR		
Q5			2SC4081(R,S)	TRANSISTOR		
Q6			2SA1576A(R,S)	TRANSISTOR		
Q7, 8			2SD1328	TRANSISTOR		
Q9, 10			2SC4081(R,S)	TRANSISTOR	YMV	
A1			W02-2539-05	FM FRONT-END ASSY		
<b>TUNER(X05-4700-10) K,P,T,E,Q type only</b>						
C1			CE04LW1C470M	ELECTRO 47UF 16WV		
C2			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C3-6			CK73FB1H103K	CHIP C 0.010UF K	KP	
C3-8			CK73FB1H103K	CHIP C 0.010UF K	TEQ	
C9			C91-0769-05	CERAMIC 0.010UF K	TEQ	
C29			CK73EB1E104K	CHIP C 0.10UF K		
C30			CK73EB1E473K	CHIP C 0.047UF K	KP	
C31			CE04LW1C470M	ELECTRO 47UF 16WV		
C32			CK73FB1H103K	CHIP C 0.010UF K		
C33			CE04LW1C100M	ELECTRO 10UF 16WV		
C34			CK73EB1E104K	CHIP C 0.10UF K		
C35			CE04LW1C100M	ELECTRO 10UF 16WV		
C36			CK73FB1E473K	CHIP C 0.047UF K		
C37			CK73EF1E105Z	CHIP C 1.0UF Z		
C38			C90-3217-05	ELECTRO 10UF 10WV		

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6

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C39			CK73FB1H102K	CHIP C 1000PF K	KPQ	
C40			C90-3253-05	ELECTRO 1.0UF 50WV		
C41			C90-3251-05	ELECTRO 0.47UF 50WV		
C42			C90-3240-05	ELECTRO 2.2UF 35WV		
C43			CE04LW1HR47M	ELECTRO 0.47UF 50WV		
C44			CK73FB1E473K	CHIP C 0.047UF K		
C45			CC73FCH1H220J	CHIP C 22PF J		
C46			CE04LW1A101M	ELECTRO 100UF 10WV		
C47			CK73FB1H562K	CHIP C 5600PF K	KP	
C47			CK73FB1H682K	CHIP C 6800PF K	TEQ	
C48			CC73FSL1H101J	CHIP C 100PF J	Q	
C48			CK73FB1H102K	CHIP C 1000PF K	TE	
C48			CK73FB1H122K	CHIP C 1200PF K	KP	
C49			C90-3253-05	ELECTRO 1.0UF 50WV		
C50			CK73FB1H102K	CHIP C 1000PF K	TEQ	
C51, 52			C90-3217-05	ELECTRO 10UF 10WV		
C53, 54			CK73FB1H223K	CHIP C 0.022UF K	TEQ	
C53, 54			CK73FB1H333K	CHIP C 0.033UF K	KP	
C55, 56			C90-3240-05	ELECTRO 2.2UF 35WV		
C57, 58			CK73FB1H822K	CHIP C 8200PF K	TE	
C59			CK73FB1H103K	CHIP C 0.010UF K	KPQ	
C60			CK73FB1E104K	CHIP C 0.10UF K	TEQ	
C61			CK73FB1H103K	CHIP C 0.010UF K		
C64			CK73FB1H333K	CHIP C 0.033UF K		
C66			CC73FCH1H060D	CHIP C 6.0PF D	TEQ	
C67			CC73FCH1H220J	CHIP C 22PF J	TEQ	
C68			CC73FSL1H020C	CHIP C 2.0PF C	TEQ	
C69			CK73FB1H103K	CHIP C 0.010UF K		
C70			CC73FSL1H101J	CHIP C 100PF J		
C81			CC73FCH1H220J	CHIP C 22PF J		
C82			CC73FCH1H270J	CHIP C 27PF J		
C84			CK73FB1H102K	CHIP C 1000PF K		
C85			C91-0745-05	CERAMIC 100PF K		
C86			C91-0757-05	CERAMIC 1000PF K		
C87			CE04LW1C100M	ELECTRO 10UF 16WV		
C89			CE04LW1C470M	ELECTRO 47UF 16WV		
C90			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C91			CQ92FM1H223J	MYLAR 0.022UF J		
C92			CC73FSL1H471J	CHIP C 470PF J		
C93			CK73FB1H103K	CHIP C 0.010UF K		
C94			CK73FB1H102K	CHIP C 1000PF K		
C95			CC73FCH1H470J	CHIP C 47PF J		
C96			CC73FSL1H101J	CHIP C 100PF J		
C97			CC73FSL1H331J	CHIP C 330PF J	Q	
C97			CK73FB1H102K	CHIP C 1000PF K	KP	
C98			CC73FSL1H101J	CHIP C 100PF J	KP	
C99, 100			CC73FSL1H471J	CHIP C 470PF J	KPQ	
C102			CC73FSL1H181J	CHIP C 180PF J	KP	
C103			CK73FB1H102K	CHIP C 1000PF K	Q	
C103			CC73FSL1H101J	CHIP C 100PF J	KP	
CN1			E40-9831-05	SOCKET FOR PIN ASSY	KPTE	
CN2			E40-4871-05	PIN ASSY		
J1	2C	*	E70-0079-05	LOCK TERMINAL BOARD (ANT)	KP	
J1	2C	*	E70-0080-05	LOCK TERMINAL BOARD (ANT)	TEQ	
WH2			E89-0001-05	FINISHED WIRE	TEQ	

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7

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J2		*	F10-1074-04	SHIELDING PLATE	KP	
J2		*	F10-1075-04	SHIELDING PLATE	TEQ	
CF1 .2			L72-0536-05	CERAMIC FILTER	TEQ	
CF1 .2		*	L72-0596-05	CERAMIC FILTER	KP	
L31			L30-0910-05	FM IFT	KP	
L31			L30-0929-05	FM IFT	TEQ	
L32			L30-0930-05	FM IFT	TEQ	
L33			L30-0911-05	AM IFT		
L34		*	L79-1240-05	LC FILTER	TEQ	
L35 .36		*	L79-1239-05	LC FILTER	TE	
L61		*	L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
L62		*	L39-1351-05	COMBINATION COIL		
L63			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)	TEQ	
X31			L78-0295-05	RESONATOR (456KHZ)		
X81		*	L77-2187-05	CRYSTAL RESONATOR(7.2MHZ)		
R1			RD14NB2E101J	RD	100 J 1/4W	
R2			RK73FB2B221J	CHIP R	220 J 1/8W	
R3			RK73FB2A331J	CHIP R	330 J 1/10W	KP
R3			RK73FB2A332J	CHIP R	3.3K J 1/10W	TEQ
R4			RK73FB2A681J	CHIP R	680 J 1/10W	
R5			RK73FB2A331J	CHIP R	330 J 1/10W	
R6			RK73FB2A100J	CHIP R	10 J 1/10W	KP
R6			RK73FB2A220J	CHIP R	22 J 1/10W	TE
R6			RK73FB2A470J	CHIP R	47 J 1/10W	Q
R7			RK73FB2A332J	CHIP R	3.3K J 1/10W	
R8			RK73FB2A331J	CHIP R	330 J 1/10W	
R10			RK73FB2A332J	CHIP R	3.3K J 1/10W	TEQ
R11			RK73FB2A681J	CHIP R	680 J 1/10W	TEQ
R12			RK73FB2A122J	CHIP R	1.2K J 1/10W	TEQ
R13 .14			RK73FB2A331J	CHIP R	330 J 1/10W	TEQ
R15			RK73FB2A101J	CHIP R	100 J 1/10W	TEQ
R16			RK73FB2A220J	CHIP R	22 J 1/10W	TEQ
R17			RK73FB2A621J	CHIP R	620 J 1/10W	TEQ
R18			RK73FB2A123J	CHIP R	12K J 1/10W	TEQ
R19			RK73FB2A4R7J	CHIP R	4.7 J 1/10W	TEQ
R20			RK73FB2A122J	CHIP R	1.2K J 1/10W	TEQ
R22			RK73FB2A101J	CHIP R	100 J 1/10W	KP
R30			RK73FB2A681J	CHIP R	680 J 1/10W	
R31			RS14KB3A820J	FL-PROOF RS	82 J 1W	
R32			RK73EB2B562J	CHIP R	5.6K J 1/8W	
R33			RK73FB2A302J	CHIP R	3.0K J 1/10W	
R34			RK73FB2A822J	CHIP R	8.2K J 1/10W	
R35			RK73FB2A392J	CHIP R	3.9K J 1/10W	KP
R35 .36			RK73FB2A333J	CHIP R	33K J 1/10W	TEQ
R36			RK73FB2A243J	CHIP R	24K J 1/10W	KP
R37			RK73FB2A272J	CHIP R	2.7K J 1/10W	Q
R37			RK73FB2A302J	CHIP R	3.0K J 1/10W	TE
R37			RK73FB2A362J	CHIP R	3.6K J 1/10W	KP
R38			RK73FB2A333J	CHIP R	33K J 1/10W	
R39			RK73FB2A223J	CHIP R	22K J 1/10W	KP
R39			RK73FB2A473J	CHIP R	47K J 1/10W	TEQ
R40			RK73FB2A332J	CHIP R	3.3K J 1/10W	TEQ
R41			RK73FB2A222J	CHIP R	2.2K J 1/10W	TEQ
R42			RK73FB2A473J	CHIP R	47K J 1/10W	TEQ

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8

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
R43 .44			RK73FB2A222J	CHIP R	2.2K J 1/10W	TEQ
R43 .44			RK73FB2A392J	CHIP R	3.9K J 1/10W	KP
R45 .46			RK73FB2A122J	CHIP R	1.2K J 1/10W	TE
R45 .46			RK73FB2A332J	CHIP R	3.3K J 1/10W	KP
R47 .48			RK73FB2A392J	CHIP R	3.9K J 1/10W	TE
R47 .48			RK73FB2A393J	CHIP R	39K J 1/10W	KP
R49			RK73FB2A473J	CHIP R	47K J 1/10W	
R51			RK73FB2A102J	CHIP R	1.0K J 1/10W	TEQ
R52			RK73FB2A104J	CHIP R	100K J 1/10W	TEQ
R53			RK73FB2A102J	CHIP R	1.0K J 1/10W	TEQ
R54			RK73FB2A683J	CHIP R	68K J 1/10W	TEQ
R55			RK73FB2A473J	CHIP R	47K J 1/10W	TEQ
R56			RK73FB2A104J	CHIP R	100K J 1/10W	TEQ
R59			RK73FB2A222J	CHIP R	2.2K J 1/10W	TEQ
R67			RK73FB2A104J	CHIP R	100K J 1/10W	
R80			RK73EB2B102J	CHIP R	1.0K J 1/8W	
R81 -83			RK73FB2A102J	CHIP R	1.0K J 1/10W	
R84			RK73FB2A103J	CHIP R	10K J 1/10W	
R85 -87			RK73FB2A102J	CHIP R	1.0K J 1/10W	KP
R85 -88			RK73FB2A102J	CHIP R	1.0K J 1/10W	TEQ
R88			RK73FB2A103J	CHIP R	10K J 1/10W	KP
R89			RD14NB2E101J	RD	100 J 1/4W	
R90			RK73FB2A562J	CHIP R	5.6K J 1/10W	
R91			RK73FB2A102J	CHIP R	1.0K J 1/10W	KP
R91			RK73FB2A222J	CHIP R	2.2K J 1/10W	TEQ
R92			RK73FB2A123J	CHIP R	12K J 1/10W	
R93			RK73FB2A122J	CHIP R	1.2K J 1/10W	
R94			RD14NB2E561J	RD	560 J 1/4W	
R101,102			RK73FB2A102J	CHIP R	1.0K J 1/10W	KPTE
R103			RK73FB2A821J	CHIP R	820 J 1/10W	KPTE
R104			RK73FB2A473J	CHIP R	47K J 1/10W	KPTE
R105			RK73FB2A822J	CHIP R	8.2K J 1/10W	KPTE
W51 -55			R92-0670-05	CHIP R	0 OHM	
W56 -58			R92-0679-05	CHIP R	0 OHM	
W59			R92-0670-05	CHIP R	0 OHM	
W60			R92-0679-05	CHIP R	0 OHM	
W61			R92-0670-05	CHIP R	0 OHM	TEQ
W62 -65			R92-0679-05	CHIP R	0 OHM	
W66			R92-0670-05	CHIP R	0 OHM	TEQ
W67			R92-0679-05	CHIP R	0 OHM	
W68			R92-0670-05	CHIP R	0 OHM	KP
W69 -71			R92-0679-05	CHIP R	0 OHM	
W72 -74			R92-0670-05	CHIP R	0 OHM	TE
W72 .73			R92-0670-05	CHIP R	0 OHM	KPQ
W75 -77			R92-0670-05	CHIP R	0 OHM	Q
W76 .77			R92-0670-05	CHIP R	0 OHM	KP
W79			R92-0679-05	CHIP R	0 OHM	Q
W80			R92-0670-05	CHIP R	0 OHM	
W81			R92-0679-05	CHIP R	0 OHM	KPTE
W82			R92-0670-05	CHIP R	0 OHM	KP
W83 -85			R92-0679-05	CHIP R	0 OHM	
W86 .87			R92-0670-05	CHIP R	0 OHM	Q
D1			1SS133	DIODE		
D31			MTZJ8.2(B)	ZENER DIODE		TEQ
D32			MA111	DIODE		
D33			1SS133	DIODE		TEQ
D61 .62			1SS133	DIODE		

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105VR/KR-V5090

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9

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
D81 D101 IC1 IC2 IC3			MTZJ5.1(B) MTZJ3.3(B) LA1836 LC72131 NJM2904M	ZENER DIODE ZENER DIODE ANALOGUE IC MOS-IC IC(OP AMP X2)	KPTE    TEQ	
Q1 Q1 ,2 Q3 Q31 ,32 Q32			2SC2714(R,O) 2SC2714(R,O) 2SA1576A(R,S) 2SC4081(R,S) 2SC4081(R,S)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	KP TEQ TEQ TEQ KP	
Q81 Q101,102 Q103			2SA1576A(R,S) 2SD1328 2SA1576A(R,S)	TRANSISTOR TRANSISTOR TRANSISTOR	  KPTE KPTE	
A1 A1 A1			W02-2539-05 W02-2565-05 W02-2579-05	FM FRONT-END ASSY FM FRONT-END ASSY FM FRONT-END ASSY	KP TE Q	
<b>AUDIO(X09-4520-10)</b>						
D131-133		*	B30-2493-05	LED(RED)		
C2 ,4 C5 C6 C7 C8			CK45FF1H103Z CE04EW1E331M CK45FB1H102K CE04LW1A470M CK45FF1H103Z	CERAMIC ELECTRO CERAMIC ELECTRO CERAMIC	0.010UF Z 330UF 25WV 1000PF K 47UF 10WV 0.010UF Z	KP KP KP KP KP
C9 C10 C11 ,12 C17 ,18 C19		*	CE04LW1V4R7M CK45FF1H103Z C91-1564-05 C90-3580-05 CK45FF1H103Z	ELECTRO CERAMIC MF-C ELECTRO CERAMIC	4.7UF 35WV 0.010UF Z 0.22UF J 4700UF 63WV 0.010UF Z	KP TEQ
C20 C20 C22 C23 C25			CE04LW1H221M CE04LW1J470M CE04LW1V100M CK45FF1H103Z CE04LW1V222M	ELECTRO ELECTRO ELECTRO CERAMIC ELECTRO	220UF 50WV 47UF 63WV 10UF 35WV 0.010UF Z 2200UF 35WV	TEQ KPYMVX
C27 C28 C29 C33 C35			CE04LW1V470M CE04LW1H470M CK45FB1H102K CE04LW1C470M CK45FB1H102K	ELECTRO ELECTRO CERAMIC ELECTRO CERAMIC	47UF 35WV 47UF 50WV 1000PF K 47UF 16WV 1000PF K	
C36 C39 C40 C40 C41			CE04LW1C470M CE04LW1C470M CE04LW1C100M CE04LW1C100M CE04LW1A221M	ELECTRO ELECTRO ELECTRO ELECTRO ELECTRO	47UF 16WV 47UF 16WV 10UF 16WV 10UF 16WV 220UF 10WV	Q YMXTE Q
C41 C41 C43 ,44			CE04LW1A221M CE04LW1C100M CK45FF1H103Z	ELECTRO ELECTRO CERAMIC	220UF 10WV 10UF 16WV 0.010UF Z	YMXTE KP
C45 C47 C48 C49 C51 ,52			CE04LW1C470M CE04LW1C470M CE04LW1V4R7M CE04LW1A221M CC45FSL1H470J	ELECTRO ELECTRO ELECTRO ELECTRO CERAMIC	47UF 16WV 47UF 16WV 4.7UF 35WV 220UF 10WV 47PF J	Q
C51 ,52 C53 ,54 C53 ,54			CC45FSL1H470J CE04LW1C100M CE04LW1C100M	CERAMIC ELECTRO ELECTRO	47PF J 10UF 16WV 10UF 16WV	YMXTE Q YMXTE

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10

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C55 ,56 C55 ,56 C57 ,58 C59 C59 ,60			CC45FSL1H470J CC45FSL1H470J CC45FSL1H221J CK45FF1H103Z CK45FF1H103Z	CERAMIC CERAMIC CERAMIC CERAMIC CERAMIC	47PF J 47PF J 220PF J 0.010UF Z 0.010UF Z	Q YMXTE  KP Q
C59 ,60 C61 ,62 C63 ,64 C65 ,66 C67 ,68			CK45FF1H103Z CC45FSL1H220J CE04LW1C100M CC45FSL1H221J CE04LW1A101M	CERAMIC CERAMIC ELECTRO CERAMIC ELECTRO	0.010UF Z 22PF J 10UF 16WV 220PF J 100UF 10WV	YMXTE
C69 ,70 C71 ,72 C73 ,74 C75 ,76 C77 ,80			CK45FB1H102K CQ92FM1H123J CQ92FM1H332J CE04LW1V4R7M CK45FF1H472Z	CERAMIC MYLAR MYLAR ELECTRO CERAMIC	1000PF K 0.012UF J 3300PF J 4.7UF 35WV 4700PF Z	TEQ
C81 C82 C83 C84 ,87 C88			CQ92FM1H223J CQ92FM1H473J CE04LW1A221M CE04LW1C100M CE04LW1A221M	MYLAR MYLAR ELECTRO ELECTRO ELECTRO	0.022UF J 0.047UF J 220UF 10WV 10UF 16WV 220UF 10WV	
C89 ,90 C91 C92 C93 C94			CF92FV1H104J CE04LW1HR47M CE04LW1V4R7M CE04LW1HR47M CE04LW1V4R7M	MF-C ELECTRO ELECTRO ELECTRO ELECTRO	0.10UF J 0.47UF 50WV 4.7UF 35WV 0.47UF 50WV 4.7UF 35WV	
C95 C96 C97 ,98 C99 C100			CF92FV1H154J CE04LW1H3R3M CF92FV1H154J CE04LW1H3R3M CF92FV1H154J	MF-C ELECTRO MF-C ELECTRO MF-C	0.15UF J 3.3UF 50WV 0.15UF J 3.3UF 50WV 0.15UF J	
C101 C102 C103 C104 C105,106			CE04LW1V4R7M CE04LW1HR47M CE04LW1V4R7M CE04LW1HR47M CF92FV1H104J	ELECTRO ELECTRO ELECTRO ELECTRO MF-C	4.7UF 35WV 0.47UF 50WV 4.7UF 35WV 0.47UF 50WV 0.10UF J	
C107 C108 C110 C111 C116,117			CE04LW1C470M CF92FV1H474J CQ92FM1H681J CK45FB1H102K CE04LW1C100M	ELECTRO MF-C MYLAR CERAMIC ELECTRO	47UF 16WV 0.47UF J 680PF J 1000PF K 10UF 16WV	
C118 C120 C121 C124,125 C127			CF92FV1H474J CE04LW1H4R7M CE04HW1E4R7M CE04LW1C100M CK45FF1H103Z	MF-C ELECTRO NP-ELEC ELECTRO CERAMIC	0.47UF J 4.7UF 50WV 4.7UF 25WV 10UF 16WV 0.010UF Z	
C129 C130 C131 C133 C134			CK45FB1H102K CE04LW1H2R2M CE04LW1HR33M CE04LW1A221M CE04LW1HR47M	CERAMIC ELECTRO ELECTRO ELECTRO ELECTRO	1000PF K 2.2UF 50WV 0.33UF 50WV 220UF 10WV 0.47UF 50WV	
C135 C136 C137 C138 C141,142			CQ92FM1H823J CQ92FM1H332J CQ92FM1H823J CE04LW1A221M CE04LW1C100M	MYLAR MYLAR MYLAR ELECTRO ELECTRO	0.082UF J 3300PF J 0.082UF J 220UF 10WV 10UF 16WV	

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11

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C145,146 C155 C156 C159 C161,162			CE04LW1C220M CE04LW1C100M CE04LW1C470M CE04LW1C100M CE04LW1H010M	ELECTRO 22UF 16WV ELECTRO 10UF 16WV ELECTRO 47UF 16WV ELECTRO 10UF 16WV ELECTRO 1.0UF 50WV		
C163-166 C167,168 C169,170 C171,172 C173,174			CE04LW1H3R3M CQ92FM1H683J CE04LW1HR22M CQ92FM1H153J C91-1561-05	ELECTRO 3.3UF 50WV MYLAR 0.068UF J ELECTRO 0.22UF 50WV MYLAR 0.015UF J FILM 0.82UF J		
C175,176 C177,178 C179,180 C181,182 C183		*	CQ92FM1H222J CE04LW1H0R1M CQ92FM1H472J CE04LW1H3R3M CE04LW1C470M	MYLAR 2200PF J ELECTRO 0.1UF 50WV MYLAR 4700PF J ELECTRO 3.3UF 50WV ELECTRO 47UF 16WV		
C184 C185 C186 C189,190 C191			CE04LW1HR47M CQ92FM1H472J CE04LW1HR47M CE04LW1H010M CK45FB1H102K	ELECTRO 0.47UF 50WV MYLAR 4700PF J ELECTRO 0.47UF 50WV ELECTRO 1.0UF 50WV CERAMIC 1000PF K		
C201,202 C203,204 C205,206 C207,208 C209			CE04LW1V4R7M CK45FB1H391K CE04LW1A101M CE04LW1H101M CE04HW1A470M	ELECTRO 4.7UF 35WV CERAMIC 390PF K ELECTRO 100UF 10WV ELECTRO 100UF 50WV NP-ELEC 47UF 10WV		
C211,212 C213,214 C215,216 C251,252 C253,254			CK45FF1H103Z CF92FV1H104J CE04LW1H010M CE04LW1V4R7M CK45FB1H391K	CERAMIC 0.010UF Z MF-C 0.10UF J ELECTRO 1.0UF 50WV ELECTRO 4.7UF 35WV CERAMIC 390PF K		
C255,256 C257 C258 C261,262 C263,264			CE04LW1C330M CE04LW1H221M CE04LW1H101M CK45FF1H103Z CF92FV1H104J	ELECTRO 33UF 16WV ELECTRO 220UF 50WV ELECTRO 100UF 50WV CERAMIC 0.010UF Z MF-C 0.10UF J		
C301,302 C303,304 C305,306 C307-310 C451-462			CE04LW1H010M CE04LW1C100M CE04LW1H4R7M CE04LW1C100M C91-0745-05	ELECTRO 1.0UF 50WV ELECTRO 10UF 16WV ELECTRO 4.7UF 50WV ELECTRO 10UF 16WV CERAMIC 100PF K	TEQ	
C463,464 C465,466 C467,468 C469,470 C471			CE04LW1H2R2M C91-0753-05 CE04LW1C220M CK45FF1H103Z C91-0757-05	ELECTRO 2.2UF 50WV CHIP C 470PF K ELECTRO 22UF 16WV CERAMIC 0.010UF Z CERAMIC 1000PF K		
C501 C502,503 C504,505 C506 C506			C91-0769-05 C90-3253-05 C91-0769-05 C90-1827-05 C90-1827-05	CERAMIC 0.010UF K ELECTRO 1.0UF 50WV CERAMIC 0.010UF K ELECTRO 0.047F 5.5WV ELECTRO 0.047F 5.5WV	Q YMXVTE	
C506 C507 C508 C509,510 C511,512			C90-3216-05 C90-3214-05 C91-0769-05 C91-0745-05 C90-3214-05	ELECTRO 330UF 6.3WV ELECTRO 100UF 6.3WV CERAMIC 0.010UF K CERAMIC 100PF K ELECTRO 100UF 6.3WV	KP	

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12

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C513-516 C520 C521-525 C527,528			C91-0745-05 C91-0745-05 C91-0769-05 CK45FB1H471K	CERAMIC 100PF K CERAMIC 100PF K CERAMIC 0.010UF K CERAMIC 470PF K	TEQ	
CN11 CN16 CN17 CN18 CN21			E40-4245-05 E40-4918-05 E40-9848-05 E40-9888-05 E40-4956-05	PIN ASSY FLAT CABLE CONNECTOR PIN ASSY PIN ASSY FLAT CABLE CONNECTOR	KP	
CN22 J1 J2 J3 J3			E40-9906-05 E03-0316-05 E63-0195-05 E63-0196-05 E63-0196-05	SOCKET FOR PIN ASSY AC OUTLET PHONO JACK PHONO JACK PHONO JACK	KP Q YMXVTE	
J4 J6 J7 J8 J10,11			E11-0347-05 E70-0081-05 E70-0082-05 E11-0295-05 E63-0194-05	MINIATURE PHONE JACK(2P) LOCK TERMINAL BOARD LOCK TERMINAL BOARD PHONE JACK (3P) PHONO JACK		
△ F1 △ F6 △ F6 △ F6	1B 2C 2C 2C	*	F50-0073-05 F50-0066-05 F50-0096-05 F50-0108-05	FUSE(5X20) 4A,125V FUSE(5X20) 1A,125V FUSE(5X20) 1A,250V FUSE(5X20) 1A,250V	KP KP YMXTEQ V	
CN1-4 CN3-4 CN3-4 J9 J12-14			J13-0075-05 J13-0075-05 J13-0075-05 J11-0809-05 J11-0809-05	FUSE CLIP FUSE CLIP FUSE CLIP WIRE CLAMPER WIRE CLAMPER	KP Q YMXVTE	
L1-2 T1 X10 X10 X10			L39-0085-05 L07-2127-05 L78-0290-05 L78-0290-05 L78-0605-05	PHASE COMPENSATION COIL POWER TRANSFORMER RESONATOR (8MHZ) RESONATOR (8MHZ) RESONATOR (8.38MHZ)	KP TEQ KPYMVX	
△ R1 R2 △ R12			R92-1844-05 RD14NB2E332J RD14NB2E330J	CARBON COMPO 3.3M J 1/2W RD 3.3K J 1/4W RD 33 J 1/4W	KP KP KP	
△ R12 △ R12 R19 △ R22,23 △ R22,23			RD14NB2E4R7J RD14NB2E4R7J RD14NB2E101J RS14KB3D271J RS14KB3D271J	RD 4.7 J 1/4W RD 4.7 J 1/4W RD 100 J 1/4W FL-PROOF RS 270 J 2W FL-PROOF RS 270 J 2W	Q YMXVTE Q YMXVTE	
△ R23 △ R25 △ R28-30 △ R37 △ R38			RS14KB3D331J RS14KB3D272J RS14KB3D331J RS14KB3A100J RS14KB3D271J	FL-PROOF RS 330 J 2W FL-PROOF RS 2.7K J 2W FL-PROOF RS 330 J 2W FL-PROOF RS 10 J 1W FL-PROOF RS 270 J 2W	KP YMXVX	
△ R39,40 R107 △ R140 R141,142 △ R211			RD14NB2E101J RD14NB2E4R7J RS14KB3D472J RS14KB3D471J RD14NB2E470J	RD 100 J 1/4W RD 4.7 J 1/4W FL-PROOF RS 4.7K J 2W FL-PROOF RS 470 J 2W RD 47 J 1/4W		
R213,214 R215,216 R225,226 R231,232			R92-1771-05 RD14NB2E332J RS14KB3D4R7J RD14NB2E100J	METAL PLATE 0.22 J 2W RD 3.3K J 1/4W FL-PROOF RS 4.7 J 2W RD 10 J 1/4W		

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13

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± R261,262 R263,264 R265,266 R275,276 R519,520			RD14NB2E470J R92-1771-05 RD14NB2E332J RS14KB3D4R7J RD14NB2E221J	RD 47 J 1/4W METAL PLATE 0.22 J 2W RD 3.3K J 1/4W FL-PROOF RS 4.7 J 2W RD 220 J 1/4W		
R522			RD14NB2E100J	RD 10 J 1/4W		
± K1 K2 ,3 S1 S101-128 S130-132	2C	*	S76-0057-05 S76-0056-05 S62-0034-05 S70-0031-05 S70-0031-05	MAGNETIC RELAY MAGNETIC RELAY SLIDE SWITCH TACT SWITCH TACT SWITCH	KP    TEQ	
S132			S70-0031-05	TACT SWITCH	KPYMVX	
S133 S134			T99-0559-05 T99-0571-05	ROTARY ENCODER ROTARY ENCODER		
± D1 D2 -5 D2 -5 D6 D7 ,8			1SS131 S5688B 1SR139-400 MTZJ6.2(B) 1SS131	DIODE DIODE DIODE ZENER DIODE DIODE	KP KP KP KP KP	
± D9 D10 D11 D12 D12			MTZJ2.7(B) 1SS131 RBV-602LFA S5688B 1SR139-400	ZENER DIODE DIODE DIODE DIODE DIODE	KP	
± D13 D14 D14 D15 D16			MTZJ5.1(B) S5688B 1SR139-400 1SS131 MTZJ15(B)	ZENER DIODE DIODE DIODE DIODE ZENER DIODE		
± D17 D18 D19 -22 D19 -22 D23			MTZJ3.9(B) MTZJ15(B) S5688B 1SR139-400 MTZJ11(B)	ZENER DIODE ZENER DIODE DIODE DIODE ZENER DIODE		
D24 D25 D26 ,27 D26 ,27 D27			MTZJ2.7(B) 1SS131 MTZJ5.1(B) MTZJ5.1(B) MTZJ5.1(B)	ZENER DIODE DIODE ZENER DIODE ZENER DIODE ZENER DIODE	Q YMXVTE KP	
D29 D30 -34 D41 D51 ,52 D101-110			MTZJ10(B) 1SS131 1SS133 MTZJ11(B) 1SS133	ZENER DIODE DIODE DIODE ZENER DIODE DIODE		
D111,112 D112 D112-121 D112,113 D114-121			1SS131 1SS131 1SS131 1SS131 1SS131	DIODE DIODE DIODE DIODE DIODE	YMV TE Q X TE	
D115-121 D124 D127 ED1 IC1			1SS131 MTZJ5.6(B) 1SS133 FIP10DM6R NJM2279D	DIODE ZENER DIODE DIODE INDICATOR TUBE IC(VIDEO IC)	KPYMVX   Q	

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14

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
IC1 IC2 IC3 IC4 IC5			NJM2279D LA2786 LV1016 TC9215AP M62430FP	IC(VIDEO IC) ANALOGUE IC DI BI-POLAR IC ANALOGUE IC ANALOGUE IC	YMXVTE	
Δ IC6 ,7 IC8 IC18 IC19 IC21		*	STK499-070 NJM4580D-D NJU7313AL NJM4565D-D CXP82532-151Q	HYBRID IC IC(OP AMP X2) ANALOGUE IC IC(OP AMP X2) MI-COM IC	KPYMVX	
IC21 IC22 IC23		*	CXP82540-152Q S-806D-Z X24C04P	MI-COM IC ANALOGUE IC MEMORY IC	TEQ	
Δ Q1 Q2		*	2SC3940A(R,S) 2SC2003(L,K)	TRANSISTOR TRANSISTOR	TEQ KP KP	
Δ Q12 Δ Q13 Δ Q14 Δ Q15 Q16		*	2SA1534A(R,S) 2SD2525 2SB1640 2SC1740S(Q,R) 2SA933AS(Q,R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q17 Q18 Q19 Q21 -24 Q25			2SC1740S(Q,R) 2SC2878(B) 2SC3940A(R,S) 2SC2878(B) 2SA992(F,E)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q26 ,27 Q28 Q29 ,30 Q101,102 Q103-105			2SC1845(F,E) DTC113ZSA 2SA933AS(Q,R) 2SC1740S(Q,R) DTC143TSA	TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR		
Q107 Q201,202 Q203,204 Q205 Q206		*	2SA933AS(Q,R) 2SC2878(B) 2SC1845(F,E) 2SA992(F,E) DTA113ZSA	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR	YMV	
Q251,252 Q253,254 Q301,302			2SC2878(B) 2SC1845(F,E) 2SC2878(B)	TRANSISTOR TRANSISTOR TRANSISTOR		
A1		*	W02-2583-05	OPTIC RECEIVING MODULE		
<b>SUB(X13-7450-20) EXCEPT K,P type</b>						
Δ C1 C2 C3 C4 C5			CK45FF1H103Z C91-1488-05 CE04EW1E331M CE04LW1A470M CE04LW1V4R7M	CERAMIC 0.010UF Z MF 6800PF 250VAC ELECTRO 330UF 25WV ELECTRO 47UF 10WV ELECTRO 4.7UF 35WV		
Δ C6 Δ C6 ,7 C8 ,9 C10 C15			C91-1488-05 C91-1488-05 CK45FF1H103Z CK45FB1H102K CK45FF1H103Z	MF 6800PF 250VAC MF 6800PF 250VAC CERAMIC 0.010UF Z CERAMIC 1000PF K CERAMIC 0.010UF Z	Y MVXTEQ	
C50 ,51 C101 C102 C103			CK45FB1H471K CK45FF1H103Z CE04LW1H2R2M CC45FSL1H331J	CERAMIC 470PF K CERAMIC 0.010UF Z ELECTRO 2.2UF 50WV CERAMIC 330PF J	TEQ TEQ TEQ TEQ	

L : Scandinavia K : USA P : Canada R : Mexico  
Y : PX(Far East, Hawaii) T : Europe E : Europe G : Germany  
Y : AAFES(Europe) X : Australia M : Other Areas

Δ indicates safety critical components.

105VR/KR-V5090  
PARTS LIST

# 105VR/KR-V5090

## PARTS LIST

\* New Parts  
 Parts without **Parts No.** are not supplied.  
 Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.  
 Teile ohne **Parts No.** werden nicht geliefert.

15

Ref. No	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
C104			CK45FB1H561K	CERAMIC 560PF K	TEQ	
C105			CC45FCH1H470J	CERAMIC 47PF J	TEQ	
C106			CC45FCH1H220J	CERAMIC 22PF J	TEQ	
C107,108			CK45FF1H103Z	CERAMIC 0.010UF Z	TEQ	
C109			CE04LW1V470M	ELECTRO 47UF 35WV	TEQ	
C110			CK45FF1H103Z	CERAMIC 0.010UF Z	TEQ	
CN1			E40-4245-05	PIN ASSY		
CN4			E40-4294-05	FLAT CABLE CONNECTOR		
CN10			E40-4295-05	FLAT CABLE CONNECTOR	TEQ	
Δ J1	1B		E03-0109-05	AC OUTLET	T	
Δ J1	1B		E03-0305-05	AC OUTLET	MEQ	
Δ J1	1B		E03-0316-05	AC OUTLET	Y	
Δ J1	1B		E03-0325-05	AC OUTLET	X	
Δ J1	1B		E03-0337-05	AC OUTLET	V	
Δ F1		*	F50-0098-05	FUSE(5X20)	XTEQ	
Δ F1		*	F50-0110-05	FUSE(5X20)	V	
Δ F1 .2		*	F50-0098-05	FUSE(5X20)	YM	
Δ F3		*	F50-0100-05	FUSE(5X20)	EQ	
CN2 .3			J13-0075-05	FUSE CLIP		
CN6 .7			J13-0075-05	FUSE CLIP	YM	
CN8 .9			J13-0075-05	FUSE CLIP	EQ	
L101			L40-1091-17	SMALL FIXED INDUCTOR(1UH)	TEQ	
L102			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)	TEQ	
Δ T1			L07-2128-05	POWER TRANSFORMER	YM	
Δ T1			L07-2129-05	POWER TRANSFORMER	VXTEQ	
Δ X1		*	L77-2206-05	CRYSTAL RESONATOR(4.332MHZ)	TEQ	
Δ K1			S76-0044-05	MAGNETIC RELAY		
Δ S1	1B		S68-0056-05	PUSH SWITCH	MVXTEQ	
Δ S2	1C		S31-3010-05	SLIDE SWITCH	YM	
Δ D1 -4			S5688B	DIODE		
Δ D1 -4			1SR139-400	DIODE		
Δ D5			MTZJ6.2(B)	ZENER DIODE		
Δ D6 .7			1SS131	DIODE		
Δ D8			MTZJ2.7(B)	ZENER DIODE		
D10			1SS133	DIODE		
IC5			SAA6579	ANALOGUE IC	TEQ	
Δ Q1			2SC3940A(R,S)	TRANSISTOR		
Q2			2SC2003(L,K)	TRANSISTOR		
Q6			DTC124ESA	DIGITAL TRANSISTOR	TEQ	

L : Scandinavia K : USA P : Canada R : Mexico  
 Y : PX(Far East, Hawaii) T : Europe E : Europe G : Germany  
 Y : AAFES(Europe) X : Australia M : Other Areas

Δ indicates safety critical components



# 105VR/KR-V5090

## SPECIFICATIONS

### 105VR for U.S.A and Canada

#### Audio section

Rated power output at the STEREO operation

50 watts per channel minimum RMS, both channels driven at 8  $\Omega$ , from 40 Hz to 20,000 Hz with no more than 0.8 % total harmonic distortion. (FTC)

Power output at the SURROUND operation

Front

50 watts per channel minimum RMS, both channels driven, at 8  $\Omega$ , 1 kHz with no more than 0.8 % total harmonic distortion.

Center

50 watts minimum RMS at 8  $\Omega$ , 1 kHz with no more than 0.8 % total harmonic distortion.

Surround

50 watts minimum RMS, at 8  $\Omega$ , 1 kHz with no more than 0.8 % total harmonic distortion.

Total harmonic distortion ..... 0.03% (1 kHz, 25 W, 8  $\Omega$ )

Signal to noise ratio (IHF'66)

PHONO (MM) ..... 75 dB

LINE (CD) ..... 94 dB

Input sensitivity / impedance

PHONO (MM) ..... 3.0 mV / 47 k $\Omega$

CD ..... 220 mV / 47 k $\Omega$

Tone controls

BASS .....  $\pm 8$  dB (at 100 Hz)

MIDDLE .....  $\pm 8$  dB (at 900 Hz)

TREBLE .....  $\pm 8$  dB (at 10 kHz)

N.B. circuit ..... + 5 dB (80 Hz)

#### FM Tuner section

Tuning frequency range ..... 87.5 MHz ~ 108 MHz

Usable sensitivity

MONO ..... 1.3  $\mu$ V (at 75  $\Omega$ ) / 13.2 dBf  
(75 kHz dev., SINAD 30 dB)

50 dB quieting sensitivity

STEREO ..... 31.6  $\mu$ V (at 75  $\Omega$ ) / 41.2 dBf

Total harmonic distortion (1 kHz)

MONO ..... 0.5 % (65 dBf input)

STEREO ..... 0.6 % (65 dBf input)

Signal to noise ratio (1 kHz 75 kHz dev.)

MONO ..... 75 dB (65 dBf input)

STEREO ..... 68 dB (65 dBf input)

Stereo separation (1 kHz) ..... 40 dB

Selectivity (IHF  $\pm 400$  kHz) ..... 66 dB

Frequency response ..... 30 Hz ~ 15 kHz, + 0.5 dB, - 3.0 dB

#### AM Tuner section

Tuning frequency range ..... 530 kHz ~ 1,700 kHz

Usable sensitivity (30 % mod., S/N 20 dB)

..... 15  $\mu$ V / (500  $\mu$ V / m)

Signal to noise ratio (30 % mod., 1 mV input) ..... 48 dB

#### General

Power consumption ..... 180 W

AC outlet

SWITCHED ..... 1: (50 W, 0.42 A max.)

Dimensions ..... W: 440 mm (17-5/16")

H: 127 mm (5")

D: 389 mm (15-5/16")

Weight (net) ..... 6.8 kg (15 lb)

# 105VR/KR-V5090

## SPECIFICATIONS

### KR-V5090

#### Audio section

Rated power output at the STEREO operation

50 watts per channel minimum RMS, both channels driven at 8  $\Omega$ , from 40 Hz to 20,000 Hz with no more than 0.7 % total harmonic distortion. (FTC)

1 kHz, 10 % THD at 8  $\Omega$  ..... 70 W + 70 W  
(DIN/IEC) from 63 Hz to 12,500 Hz,  
0.7 % T.H.D., at 8  $\Omega$  ..... 50 W + 50 W

Power output at the Surround operation

Front (1 kHz, 0.7 % T.H.D. at 8  $\Omega$ ) ..... 50 W + 50 W  
Center (1 kHz, 0.7 % T.H.D. at 8  $\Omega$ ) ..... 50 W  
Surround (1 kHz, 0.7 % T.H.D. at 8  $\Omega$ ) ..... 50 W

Front (1 kHz, 10 % T.H.D. at 8  $\Omega$ ) ..... 70 W + 70 W  
Center (1 kHz, 10 % T.H.D. at 8  $\Omega$ ) ..... 70 W  
Surround (1 kHz, 10 % T.H.D. at 8  $\Omega$ ) ..... 70 W

Total harmonic distortion (1 kHz, 8  $\Omega$ ) ..... 0.03 % at 25 W

Signal to noise ratio (IHF'66)

PHONO (MM) ..... 75 dB  
CD ..... 94 dB

Input sensitivity / impedance

PHONO (MM) ..... 3.0 mV / 47 k $\Omega$   
CD ..... 220 mV / 47 k $\Omega$

Tone controls

BASS .....  $\pm$  8 dB (at 100 Hz)  
MIDDLE .....  $\pm$  8 dB (at 900 Hz)  
TREBLE .....  $\pm$  8 dB (at 10 kHz)

N.B. circuit ..... + 5 dB (80 Hz)

#### Video section

VIDEO inputs / outputs (Composite) ..... 1 Vp-p / 75  $\Omega$

#### Note :

We follow a policy of continuous advancements in development. For this reason specifications may be changed without notice.

#### Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

#### FM Tuner section

Tuning frequency range ..... 87.5 MHz ~ 108 MHz

Usable sensitivity

MONO ..... 2.0  $\mu$ V (at 75  $\Omega$ ) / 17.2 dBf  
(75 kHz dev., SINAD 3 $\phi$  dB)

50 dB quieting sensitivity

STEREO ..... 35  $\mu$ V (at 75  $\Omega$ ) / 42.2 dBf

Total harmonic distortion (1 kHz)

MONO ..... 0.7 % (65 dBf input)  
STEREO ..... 0.8 % (65 dBf input)

Signal to noise ratio (1 kHz 75 kHz dev.)

MONO ..... 73 dB (65 dBf input)  
STEREO ..... 66 dB (65 dBf input)

Selectivity (IHF  $\pm$  400 kHz) ..... 50 dB

Stereo separation (1 kHz) ..... 40 dB

Frequency response ..... 30 Hz ~ 15 kHz, + 0.5 dB, - 3.0 dB

#### AM Tuner section

Tuning frequency range

9 kHz ..... 531 kHz ~ 1,602 kHz  
10 kHz ..... 530 kHz ~ 1,610 kHz

Usable sensitivity (30 % mod., S/N 20 dB)

13  $\mu$ V / (500  $\mu$ V / m)

Signal to noise ratio (30 % mod., 1 mV input) ..... 50 dB

#### General

Power consumption ..... 200 W

AC outlet

SWITCHED ..... 1: (50 W max.)

Dimensions ..... W: 440 mm

H: 127 mm

D: 389 mm

Weight (net) ..... 7.7 kg

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